

Quantifying Preferences for Redistribution ^{*}

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Abstract

This paper constructs quantified measures of preferences for redistribution using survey data from seven OECD countries in which respondents were asked how much in taxes individuals earning given levels of income “should” pay. The resulting preferred tax rates generate reasonable budget sets, are consistent with observed tax rates, and correlate closely with conventional categorical preference measures and voting behavior. While the overall variation in preferred progressivity is substantial, differences in preferences across political and economic subgroups are modest. Individuals do not appear to prefer disproportionately lower tax rates at income levels close to their own. Actual tax schedules imply a larger size of government than preferred tax schedules but often do tend to reflect preferred progressivity.

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1 Introduction

Optimal income tax models assume that governments set taxes to maximize a social welfare function taking individual preferences over consumption and leisure and social welfare weights as inputs. Actual tax systems arise through a political process and are instead likely to represent some aggregation of individual preferences for redistribution. These preferences may reflect individual self-interest, taste for fairness, and beliefs about the distortionary costs of taxation. The resulting tax systems need not correspond to the optimal tax under any set of social welfare weights.¹ Taxes are a primary determinant of economic behavior and may help to explain large observed differences in labor supply, economic activity, and growth across countries and over time (Koester and Kormendi 1989; Ohanian, et al. 2007; Padovano and Galli 2001; Prescott 2004). Understanding the redistributive preferences that underlie *actual* tax systems is therefore critical.

A broad literature has analyzed the determinants of these preferences at both individual and national levels. These analyses have generally relied on categorical self-reported preference measures that solicit preferences for redistribution in terms of agreement with a given proposition. Individuals may be provided a statement, such as “the government should take measures to reduce differences in income levels,” and asked if they agree or disagree² or be asked to rate the importance of a given statement, indicating, for instance, on a scale of one to ten whether having “governments tax the rich and subsidize the poor” is an essential characteristic of democracy.³

This paper uses a unique series of survey questions to examine tax preferences in seven OECD countries. Respondents were asked how much in taxes an individual earning a particular amount of income “should” pay. Respondents freely chose a numerical answer; no choices were provided and no restrictions given. The question was asked at four hypothetical levels of

¹ For example, individual preferences for fairness need not be over utility based measures of welfare, and beliefs about efficiency costs of taxes may be inaccurate.

² European Social Survey (ESS). Individuals are asked if they agree strongly, agree, neither agree nor disagree, disagree or disagree strongly. There are many possible variants. The United States General Social Survey (GSS) asks respondents to choose the number between one and seven that best corresponds to their belief, where one is “government should do something to reduce income differences between rich and poor” and seven is “government should not concern itself with income differences.”

³ World Values Survey (2005). Redistributive preferences may also be measured relative to the current system; for example, “are we spending too much, too little or about the right amount on welfare?” (United States General Social Survey (GSS) multiple years)

income, covering a broad range of the income distribution, making it possible to construct individuals' preferred tax schedules.

These questions have a number of advantages for examining tax preferences. Most importantly, they provide measures of individuals' preferences for redistribution that are quantifiable. Traditional measures generally collapse redistributive preferences into a single categorical variable. It is not possible to determine the magnitude of a one-unit movement or the overall variation in such a measure, and the magnitude of determinants of preferences can be measured only relative to the variation in the preference variable, not in absolute terms.⁴ These data allow us to construct the distribution of tax preferences within and across countries as well as to quantify the differences in preferences across subgroups of the population. The findings can also be used to calibrate responses to conventional categorical preference measures in other data sets. In addition, the scope for subjective interpretation of these questions and responses is limited: individuals do not need to benchmark their responses against their perceptions of "rich" and "poor" or against their perceptions of the current system. Responses are numerical and should not depend on individual interpretations of the possible responses. Finally, it is possible to compare preferred and actual redistribution in each country, a comparison that is not possible with traditional measures.

I provide strong evidence that responses to the survey questions are meaningful measures of individual preferences: implied preferred tax schedules generate reasonable budget sets, and preferred tax rates are in line with tax rates observed in actual tax systems. Individuals who favor redistribution according to conventional preference measures have higher preferred tax progressivity, and higher preferred progressivity is associated with an increased probability of voting for a left-leaning party.

The use of these measures allows us to establish a number of new facts about the measurement and structure of preferences for redistribution. First, the vast majority (87%) of respondents prefer tax schedules that are progressive. There is modest support for proportional schedules (7%). There is little support for regressive schedules and virtually no support for a pure poll tax.

⁴ Similar issues arise in the evaluation of self-reported measures of health and happiness. Another method for dealing with subjective interpretation of questions and responses is to correct responses through the use of anchoring vignettes (King, et al. 2004).

Second, calibrating the responses to a typical conventional preference measure yields some surprising findings. Even those who strongly disagree that the government should reduce income differences between high and low incomes prefer schedules that are quite progressive. In many countries, the average difference in preferred progressivity between those who strongly agree and those who strongly disagree appears modest. Given the widespread use of such measures, these results suggest an important direction for further research.

Third, while the overall heterogeneity in preferred progressivity is substantial, the differences in preferences across political and economic subgroups are modest. The difference between average preferred progressivity among those who vote for left-leaning versus right-leaning political parties is small, implying that voting behavior reflects preferences over dimensions of party platforms other than redistribution. Differences in preferences across economic subgroups are also modest, suggesting that the observation of relatively small differences in proposed reforms to redistribution systems may not reflect policy convergence from widely differing preferred points.

Finally, actual schedules are above median preferred tax schedules, but in many countries, actual tax progressivity tends to reflect preferred progressivity surprisingly closely. In other words, actual tax schedules often appear to reflect the slopes but not the levels of preferred tax schedules.

There are at least two important limitations to these preference measures. First, the survey module does not solicit individual beliefs about current tax rates. If individuals misperceive current tax rates, they may provide responses that are inconsistent with their (unobserved) preferences for government expenditure. This issue is of particular concern when examining the levels of preferred tax rates. If individuals underestimate the level of revenue required to finance their desired levels of public spending, this could help to explain why preferred schedules are on average lower than actual schedules. I present suggestive evidence on misperceptions in Section 6.2. Second, the survey does not provide information on individuals' preferences over the distribution of expenditure, and so the analysis focuses solely on redistribution through the progressivity of the tax schedule.

The remainder of the paper proceeds as follows. Section 2 discusses the data and the validity of the survey questions and Section 3 provides an overview of responses. Section 4 discusses measures of progressivity. Section 5 relates individual tax preferences to conventional

preference measures and voting behavior, quantifies variation in preferences across subgroups of the population, and examines how individual preferences vary based on own location in the income distribution. Section 6 aggregates preferences to the country level, compares preferred and actual tax schedules, and discusses implications for political economy models of the preference aggregation process. Section 7 concludes.

2 Data and Summary Statistics

2.1 Survey Data on Tax Preferences

The International Social Survey Program (ISSP) is an organization that facilitates cross-country collaboration on surveys relevant for social science research. Since 1985, the ISSP has constructed annual topical survey modules which are then administered as part of national surveys in the member countries. The data for this paper come from the survey module “Role of the Government in the Economy III” which was administered in 1996.

The series of questions of primary interest in this module are as follows: “How much tax per year, if any, (do) you think someone who earns (average annual wage of full-time unskilled worker) should pay? We mean all taxes that are deducted from a person's wages, such as (wage deductions) and (personal income tax).” Items in parentheses were substituted with actual information relevant for each country. Survey respondents were then asked how much individuals earning twice, four times and eight times the average wage of a full-time unskilled worker should pay in taxes per year. For example, in New Zealand, survey respondents were asked the following series of questions:

How much tax per year, if any, do you think someone who earns \$20,000 [NZD] should pay? We mean all taxes that are deducted from a person's wages, such as PAYE and ACC levies.⁵

And what about someone who earns \$40,000? How much tax should they pay per year?

And what about someone who earns \$80,000? How much tax should they pay per year?

And what about someone who earns \$160,000? How much tax should they pay per year?

Respondents were asked to provide a numerical response for each question. No choices were given and no restrictions were placed on the responses.⁶

⁵ PAYE (Pay As You Earn) is the main form of income tax in New Zealand. ACC is a levy collected on behalf of the Accident Compensation Corporation to cover non-work related injuries.

2.2 Additional Data Sources

The ISSP data are supplemented with data from the Luxembourg Income Study (LIS) and the OECD Database on Taxing Wages. The LIS is a cross-national data archive containing national data from multiple countries over multiple years. The LIS does not collect original data; it compiles and standardizes data provided by statistical offices in the member countries. The datasets contain nationally representative labor market and income information as well as basic demographics. The OECD database is used to construct actual tax schedules. Further information about these additional data sources is available in the Data Appendix.

2.3 Survey Sample

I restrict the ISSP sample to the set of OECD countries in which these questions were asked: Australia, the Czech Republic, Hungary, Italy, New Zealand, Poland and Spain.⁷ Although this sample is somewhat non-standard, these countries represent a wide range of generosity in government redistribution systems. Table 1 shows government spending and transfers as a share of GDP for sample countries and other OECD countries in 1996 (the survey year). Government spending as a share of GDP is 45.6% on average in sample countries, and 46.7% in non-sample OECD countries. Spending on transfer programs as a share of GDP is 17.3% on average in sample countries and 18.2% in non-sample countries. At the low end, sample countries spend at levels comparable to the United States. At the high end, spending is comparable to European countries such as France and Germany but does not reach the levels seen in many Scandinavian countries. Top marginal income tax rates also cover a wide range and are slightly higher on average in sample countries (45.7%) relative to non-sample OECD countries (42.1%). In 1995, personal income taxes comprised 26.7% of total tax revenue on

⁶ Translations of the specific questions asked in each country are provided in the Data Appendix. In Italy, the notes to the interviewer indicated that taxes referred to all taxes, including indirect consumption taxes. I discuss this issue in Section 6. In Spain, individuals were permitted to answer in percentage terms if they were unable to answer in monetary units; these percentages were recoded to monetary units in the ISSP data. Although the questionnaires do not prevent individuals from giving negative responses, such responses are not observed in the data. It is possible that negative responses (if any) were recoded as zero or missing by the national survey organizations.

⁷ The ISSP has 41 member countries. However, not all ISSP modules are administered in all member countries, and member countries may also modify the modules developed by ISSP. This survey module was administered in the United States GSS but without the questions of interest. These questions were also asked in Latvia, Israel and Russia. The measure of the average annual wage of a full-time unskilled worker used in the survey is not available for Russia, and the other two countries are different from the rest of the sample in many respects. I therefore restrict the analysis to OECD countries.

average in sample countries and 27.2% in non-sample countries. Within the sample, this share ranges from 12.8% (Czech Republic) to 45.0% (New Zealand).

There is also substantial diversity in the range of attitudes toward the role of the government in the economy in sampled countries. Australia and New Zealand (both British Commonwealth countries) are often classified with the United States, the United Kingdom and Canada as being liberal welfare states (Esping-Andersen 1990). The sample also contains two Western European countries and three former Soviet bloc countries. This diversity is advantageous, since a number of studies have documented systematic differences in preferences at the country level between the United States and continental Europe (Alesina and Glaeser 2004; Alesina, et al. 2001) and between former Communist and non-Communist countries (Alesina and Fuchs-Schündeln 2007; Corneo and Grüner 2002).

Sample sizes range from 1,000 to 2,500 observations. I keep all observations for which the four tax variables of interest are non-missing. I also drop six observations where one of the tax variables is reported as higher than or equal to the relevant income variable.⁸ Table 2 provides basic summary statistics on gender, age and education by country for the resulting sample as well as population level summary statistics from the LIS. The average age of this sample is fairly close to the population average. Across countries, the survey sample tends to have a higher share of male respondents and appears slightly more educated than the population averages.⁹

2.4 Validity of the Survey Questions

Before proceeding with the main empirical analyses, it is worthwhile to consider whether responses to these questions are reasonable. First, I demonstrate that individuals report preferred tax schedules that generate reasonable budget sets. One basic test is whether after-tax income is increasing with income. Even though the questions are not asked in terms of after-tax income, 99% of respondents report tax choices such that after-tax income increases at each of the income

⁸ The amount of preferred tax was topcoded in Spain at 10,000,000 pesetas. The average annual wage of a full-time unskilled worker is 1,500,000 pesetas. This topcoding is therefore only relevant for the fourth question and in practice affects only five observations.

⁹ The ISSP module was administered as part of independent national surveys in each of the sample countries. The availability and coding of some variables of interest, such as income, therefore vary across countries. In addition, the sampling method varied across countries, and only three countries (Hungary, Italy, and Poland) constructed survey weights. For consistency, all figures in the paper are currently unweighted. Including weights for the countries for which weights are available does not affect the results.

levels on the survey. In other words, implied marginal tax rates over these intervals do not exceed 100%. Implied marginal tax rates also do not fall below zero: 99% of respondents report schedules in which the change in preferred tax is greater than or equal to zero over every income interval.

Although preferred average tax rates are only conceptually bounded to be below 100%, drastic diversion from the range of rates observed in actual tax systems might raise concerns that individuals are not providing responses that are meaningful. Data from the OECD tax database indicate that top average tax rates on labor income in OECD countries do not exceed 55% and most top rates are substantially lower. I calculate the implied average tax rate at each income level as the preferred tax divided by the relevant income. Less than 2.5% of respondents report preferences in which an implied average tax rate exceeds 55%.¹⁰

A more general question when using any self-reported preference measure is whether these measures reflect “true” preferences. A number of studies using categorical preference measures have demonstrated that self-reported preferences predict voting behavior at an individual level and economic outcomes at an aggregate level.¹¹ I show that the tax preference measures studied here relate closely to other self-reported measures of preferences for redistribution and to more objective measures of preferences, such as voting behavior, in Sections 5.1 and 5.2.

A final concern when using any self-reported measure is whether framing may affect individual responses. To the best of my knowledge, the only other study that has used these types of questions is McCaffery and Baron (2004). They find that subjects choose higher taxes and more progressive schedules when they report responses in percent rather than dollar terms. However, there are several features of the sample and experimental methodology that raise

¹⁰ OECD Tax Database (2006). The average tax rate figures refer to the “all-in” tax rate at the highest reported level of income (167% of the average wage). This is calculated as “the combined central and sub-central government income tax plus employee social security contribution, as a percentage of gross wage earnings.” The top federal marginal tax rate among OECD countries in this year is 65% (World Tax Database); this is the level to which the top federal average tax rate must converge. Less than 1% of respondents report preferences in which an implied average tax rate exceeds this level.

¹¹ Alesina and Fuchs-Schündeln (2007) show that exposure to Communism affects preferences and voting behavior, and Luttmer and Singhal (2008) show that average birth country preference affects own preference and voting behavior. Luttmer (2001) demonstrates that the same demographic characteristics that determine preferences for welfare generosity predict voting behavior on welfare programs, Alesina et al. (2001) find a strong positive cross-country relationship between the share of the population that believe that luck determines income and social spending as a percent of GDP, and Guiso, et al. (2006) show that preferences for redistribution affect the mix of progressive and regressive taxation across US states.

concerns about the generalizability of their findings.¹² Most of the results in the paper will not be affected as long as behavioral biases are consistent for all individuals. I discuss cases in which framing may be important in the relevant subsections of the paper.

3 An Overview of Tax Preferences

Table 3 provides a summary of preferred tax schedules at the individual level. Aggregating across countries, 38.0% of respondents report preferred schedules that are strictly progressive (average tax rates increase over each income interval). A further 35.4% of individuals report preferred schedules that are “weakly” progressive: average tax rates are non-decreasing and increasing over at least one income interval. 7.2% prefer proportional schedules. 2.1% and 0.8% of individuals report preferred schedules that are weakly regressive or strictly regressive, respectively. Of those preferring a strictly regressive schedule, 7.4% (less than 0.1% of the total sample) prefer a poll tax: a schedule in which the tax level is the same at all levels of income.¹³ The rest of individuals prefer schedules that are non-monotonic. In the full sample, 13.1% of respondents prefer schedules that are non-monotonic but progressive over the full income range; counting these schedules as progressive implies that 86.5% of respondents prefer progressive schedules. Country-specific statistics are given in Table 3.

I next examine the structure of preferred tax schedules in more detail. I calculate the R-squared of a regression of preferred average tax rate on log taxpayer income for each individual using all four reported points.¹⁴ This specification assumes that individuals prefer tax schedules in which average tax rates are linear in the log of taxpayer income over the surveyed income ranges. Note that the linearity assumption can only be valid locally, since average tax rates must eventually asymptote to a top marginal rate. I find that the median unadjusted R-squared in the full sample is 88% and ranges from 80% to 93% across countries.

¹² The sample consisted of 63 self-selected online subjects who were disproportionately young and female, subjects were given a “guideline” that about 25% of total income needed to be raised to run the government, and it appears that each subject answered the same questions in both dollar and percentage terms, making the resulting differences quite puzzling.

¹³ 0.8% of individuals report a zero preferred tax at all levels of income. These individuals are retained in the sample to allow a preference for all tax revenue to be raised through non-income taxes. The figures reported above for those preferring a proportional or poll tax schedule do not include these individuals. Behavioral biases of the form in McCaffery and Baron (2004) would potentially result in underestimates of the share preferring a progressive schedule.

¹⁴ Note that R-squared’s will not be calculated for those preferring proportional or zero tax schedules, since there is no variation in the dependent variable.

Table 4 provides medians, means and standard deviations for all implied average tax rates by country. The country-specific percentiles of the individual income distribution of full-time workers from the LIS are also given for each income level.¹⁵ In some countries, the percentile associated with the base income level is surprisingly high. This appears to be a result of these countries setting a base income level that is higher than the full-time annual wage of an unskilled worker. As a percentile of the full-time worker income distribution, the base income level varies from 12 to 48 across countries. The highest income level is always at the top of the income distribution (above the 97th percentile). Mean and median preferred tax rates are within three percentage points of each other at every income level in all sample countries. Median preferred tax rates at the lowest income level range from 3% (Hungary) to 15% (Australia) and those at the highest income level range from 20% (Czech Republic) to 30% (Australia).

4 Measuring Preferred Progressivity

Determining whether a tax schedule is progressive, proportional, or regressive over a given income range simply requires examining how average tax rates change with income over that range. Ranking the progressivity of two tax schedules presents more of a challenge, and there is no universally agreed upon approach to the construction of progressivity measures. In this section, I provide a brief overview of some of the issues relating to progressivity measurement and discuss the simple measure of progressivity used here.¹⁶ I also consider the aggregation of individual preferred progressivity to a country level measure.

There are at least two ways to think about the progressivity of a tax schedule: structural progressivity, which measures the degree of tax schedule progression, and effective progressivity, which measures the effect of the tax schedule on the distribution of tax burdens relative to pre-tax income or on the distribution of post-tax income. An example of a structural progressivity measure would be the elasticity of post-tax income with respect to pre-tax income at each income level. Structural measures generally provide only a partial ordering of tax schedules, since schedules may have differing progressivity over different income ranges. Effective progressivity measures are generally derived from Lorenz-type concentration curves

¹⁵ The survey questions ask how much “someone” earning given levels of income should pay in tax. I take this as individual income. In 1998, the unit of taxation was the individual for all sample countries with the exception of Poland and Spain, where families had a choice between individual and joint taxation (OECD 1999).

¹⁶ See Lambert (2001) for a more detailed discussion of these issues.

and/or Gini coefficients. A variety of effective progressivity measures have been proposed (Kakwani 1977; Pfähler 1983; Reynolds and Smolensky 1977; Suits 1977). A feature common to these structural and effective measures is that they do not consider the use of raised revenue; implicitly, progressivity is measured relative to an equal-yield flat tax.¹⁷

Given the lack of consensus over measures of effective progressivity as well as the lack of pre-tax income data for most of the sample countries, I measure preferred progressivity using a simple structural measure: the difference between the average tax rate at the highest and lowest reported levels of income. A progressive schedule (over the aggregated income range) would have a positive difference, a proportional schedule would have a zero difference, and a regressive schedule would have a negative difference. This measure has several advantageous features. First, it allows a complete ordering of preferred tax schedules. Second, it has clear links with inequality measures: a flat rate of 20% results in the same Gini coefficient as a flat rate of 30%, and those two schedules have the same progressivity by this measure. In addition, two schedules with the same difference between the top and bottom rate in percentage point terms will result in the same distribution of after tax income if we ignore differences in tax rates at intermediate income levels. Finally, the measure is transparent, does not require any assumptions to construct, and the units are easily interpretable.¹⁸

Figure 3 presents boxplots of the difference measure of preferred progressivity for each of the sample countries. Negative values indicate that the share of income paid in taxes is rising less quickly than income, but do not mean that the rich are paying less than the poor in dollar terms. There is substantial heterogeneity in preferred progressivity within each country. The survey income levels correspond to different percentiles of country income distributions, so the medians and ranges of this progressivity measure cannot be compared directly across countries.

At the national level, I define the median preferred tax schedule as the schedule that arises from taking the median preferred tax rate at every level of income and assuming that tax rates change linearly between adjacent income levels. This method does not require assumptions about the ranking of preferred progressivity at an individual level. Note that median preferred

¹⁷ There are a number of other general issues that are relevant for thinking about progressivity, such as whether annual income is the appropriate base and how to incorporate incidence and excess burden (Vickrey 1989). These considerations are outside the scope of this paper.

¹⁸ The obvious drawbacks of this measure are that it does not incorporate information about preferred tax rates at intermediate income levels or information about the income distribution. I plan to add inequality based measures of progressivity where possible in future versions of the paper.

schedules are derived from taking the median preferred tax rate at each income level and do not necessarily correspond to the preferred schedule of a single median voter. These schedules more closely approximate those that would arise in a median voter model if individuals voted over tax rates at particular income levels rather than over a set of potential schedules. Median preferred schedules are weakly progressive in Poland and the Czech Republic and strictly progressive in all other countries (Table 4).

5 Individual Tax Preferences

5.1 Calibrating Conventional Preference Measures

In addition to the tax preferences questions, this survey module asks a more conventional question about preferences for redistribution. Respondents are given the statement: “It is the responsibility of government to reduce differences in income between people with high incomes and those with low incomes” and asked if they agree strongly, agree, neither, disagree, or disagree strongly. Progressive taxation is one of the primary ways in which governments reduce income differences, although it is important to note that the categorical preference measure may also capture redistribution on the expenditure side. Figure 2 shows median preferred tax schedules for individuals categorized by their response to this agree/disagree question for Australia.

There are several interesting features to note. First, the two measures are correlated as we would expect. Those who agree that government should reduce income differences report more progressive preferred schedules than those who disagree.¹⁹ Second, even those who disagree strongly report preferred tax schedules that are progressive. Note that each income level on the survey is twice that of the previous income level, making it straightforward for individuals to report preferred schedules that are proportional or regressive. Finally, the difference in preferred schedules between those who agree strongly and disagree strongly corresponds to approximately a 10 percentage point difference in the gap between top and bottom average tax rates.

Regression results for the full sample confirm these findings (Table 5). In the pooled sample, a one unit movement in the direction of strong disagreement on the preferences for

¹⁹ The country means of the agree/disagree and preferred progressivity measure are also correlated across countries in the expected direction.

redistribution question is associated with a 2.2 percentage point decrease in the gap between the highest and lowest preferred tax rate. Adding country fixed effects reduces the effect only slightly to 1.9 percentage points. The effect is highly significant in both cases. The effect varies from 1.3 to 2.6 percentage points across countries and is significant at the 5% level for Poland and at the 1% level for all other countries.

Panel B shows the effects for each category of agreement separately. In the pooled sample (columns 1 and 2) the relationship is monotonic: a movement towards more disagreement is always associated with lower progressivity. All pairwise differences are significant above the 1% level except between “neither” and “disagree.” Moving from agree strongly to disagree strongly is associated with an 8 percentage point reduction in the gap between the highest and lowest rates. It is not possible to precisely identify differences across each agreement category in individual countries, but those who disagree strongly always prefer less progressive schedules than those who agree strongly ($p < 0.10$ in all cases). Preferred schedules are progressive even for those who disagree strongly. The preferred progressivity measure is positive but not significant in Poland. In all remaining countries, the difference is positive and significant at the 1% level (unreported).

The average difference in the gap between the top and bottom average tax rates for those who agree strongly and those who disagree strongly ranges from 5 to 12 percentage points across countries.

5.2 Preferences and Voting Behavior

I next examine whether preferences for progressivity predict voting behavior. The ISSP classifies individuals' voting on a 1 to 5 right-left scale, derived from the party for which they voted in the last election. The categories are far right, right/conservative, center/liberal, left/center left and far left. Voting classifications are not available for Hungary and Italy. I recode those who choose an unclassified “other” party or no party as missing.

A one percentage point increase in the difference between top and bottom average tax rates, which implies higher preferred progressivity, is associated with a 0.87 unit move in voting toward the left on the five point right-left scale (Table 6). When the agree/disagree preference for redistribution measure is included, the preferred progressivity coefficient decreases to 0.49 and the agree/disagree coefficient enters with the expected sign. Both effects are significant

above the 1% level. An increase in the tax difference measure is associated with an increased probability of voting for a more left-leaning party in every country. With the exception of Poland, which has the smallest sample size, the effects are all significant at the 1% level.²⁰

Over 80% of individuals in the sample voted for a party in one of two classifications: left/center left or right/conservative. Those voting for a right/conservative party prefer on average a schedule in which the difference between top and bottom average tax rates is 2.3 percentage points lower than that preferred by those voting for a left/center left party. The implied difference is 1.5 percentage points if the average difference between these groups on the agree/disagree measure is taken and multiplied by the coefficient in Table 5. The variation between far right and far left voters is more extreme: the difference in preferred progressivity is 7.8 percentage points.

5.3 Determinants of Preferences for Progressivity

I now examine the effects of standard demographic and economic factors on preferred progressivity and the conventional preference measure (Table 7). I restrict the sample to individuals for whom the conventional preference measure is non-missing and include dummy variables for missing regressors. Income data are unavailable in two countries and are very incomplete in several others. I instead include two measures of educational attainment (years of schooling and college completion) as well as a measure of employment status. Relatively complete income data are available for Australia and New Zealand, and I consider the effect of income on preferences in this subsample in the next section.

Table 7 illustrates the effects of basic demographic characteristics and economic status variables on both preferred progressivity and reported preferences on the categorical measure described in Section 4.1. Age has a positive effect on both preferred progressivity and categorical preference, but the effects for gender and marital status are more mixed. Women and individuals who are divorced, separated or never married tend to report a stronger preference for redistribution but have preferred tax schedules with lower progressivity. Those with less

²⁰ The coefficient on the difference measure continues to be positive in all countries when the agree/disagree measure is included, but the effects are not always significant. This is not surprising given the strong correlation between the two measures. The results are very similar when the dependent variable is replaced with a party classification derived from individual's self reports about the party with which they most closely identify.

education and those who are unemployed report stronger preferences for redistribution, but these economic indicators have insignificant effects on preferred tax progressivity.

These results suggest that the differences in preferred tax schedules across economic subgroups are modest at best. The findings also indicate that variation in stated preference for redistribution is not always reflected in true differences in preferred tax progressivity. These divergences may be because the categorical preference measure captures additional dimensions of redistribution on the expenditure side. However, given the importance of tax systems in the overall redistribution of income, the findings do raise the possibility that the differences in responses to categorical measures by certain subgroups may reflect reporting biases.

5.4 Self Interest vs. Fairness

An advantage of these quantified measures is the ability to examine individual preferences for taxes at specific income levels relative to their own income levels. Relatively complete pre-tax income data is available for two countries: Australia and New Zealand. In both of these countries, individual income per year is measured in midpoints of given income ranges. There are 19 income categories for Australia and 9 income categories for New Zealand. In this subsection, I restrict the sample to individuals for whom income data is non-missing (92% of respondents in Australia and 97% of respondents in New Zealand).

I first examine the general relationship between preferred progressivity and own income (Table 8). Overall, the results indicate that those with higher incomes prefer schedules that are less progressive, although the effect is very small in magnitude and the significance of the effect is sensitive to whether income is measured in levels or logs.²¹

I next test whether individuals prefer tax rates at income levels close to their own that are disproportionately low relative to their *own* preferred tax schedules. One might expect that self-interested individuals would prefer disproportionately lower tax rates at income levels close to their own. As shown in Section 3, individuals tend to prefer schedules that are linear in the log of taxpayer income. The high average R-squared of this relationship indicates that any effect will likely be economically small. Regressions of the residuals on indicators for the relative location of individual income are sensitive to specification and do not show a consistent pattern.

²¹ Surprisingly, years of schooling has a positive effect on preferred progressivity in Australia.

6 National Tax Preferences

6.1 Preferred and Actual Tax Systems

An advantage of these data is that we can relate preferred and actual redistribution in measures that are directly comparable. Actual tax schedules are constructed from the OECD database on Taxing Wages for 1996.²² These data provide federal marginal tax rates and thresholds for a single taxpayer without dependents. I construct actual tax schedules by calculating the average tax rate at each surveyed income level and assuming that average tax rates change linearly between adjacent income levels. Although it is possible to construct a “smoother” actual schedule that incorporates actual average tax rates over the full income distribution, this method allows a more straightforward visual comparison to preferred schedules.

Figures 3A-3G illustrate median preferred tax schedules and actual tax schedules for each of the surveyed countries. The actual top marginal rate is also shown; actual average rates must eventually converge to the top marginal rate. Vertical axes indicate average tax rates and are on the same scale across countries. Horizontal axes indicate income levels in local currency. Preferred rates are below actual rates in almost all cases, and the magnitude of the gap varies substantially across countries. Actual schedules only include federal taxes, so these gaps may be underestimated.²³

Table 9 provides the actual difference between top and bottom average tax rates, the difference implied by median preferred schedules, and the preferred difference of the median individual for all countries. Over the entire income range, actual progressivity is higher than preferred progressivity in Australia, the Czech Republic, Italy and Poland; lower than preferred progressivity in Hungary and New Zealand; and exactly equal to preferred progressivity in Spain. The table also shows actual and preferred progressivity over the three income ranges defined by the survey income levels. Actual progressivity is often identical or surprisingly close to preferred progressivity, and much of the overall variation between preferred and actual progressivity appears to arise from differences over the first income range.²⁴

²² Data for 2000-2006 are publicly available. Data for 1996 were made available to the author by the OECD.

²⁴ The figures in the table define preferred progressivity over each income range as the difference between the median preferred average tax rates at the two endpoints. The results are very similar if preferred progressivity is instead measured as the median preferred difference over the range.

Preferred and actual progressivity are positively correlated across countries. The coefficient of correlation between actual progressivity and progressivity derived from median preferred schedules (over the entire income range) is 0.37. The coefficient of correlation between actual progressivity and progressivity derived from the median preferred difference between top and bottom average tax rates is 0.41.

6.2 Do Tax Rates Reflect Voter Preferences?

There are at least three reasons why actual tax schedules might differ from median preferred tax schedules. First, the political mechanism may be such that policies do not reflect the preferences of the median voter but rather some other aggregation of individual preferences. Second, individuals may vote in ways which are inconsistent with their reported preferences, either because the reported preference does not reflect true preference or because they have misperceptions about the actual tax system. Finally, politicians may have their own preferences about the size of government and redistribution and some ability to enact policies that reflect these preferences.

Preliminary results suggest that aggregation and voter behavioral biases can explain some but not all of the differences between preferred and actual schedules. Demographic characteristics generate little variation in the level of preferred tax rates, and actual tax rates generally lie above the 75th percentile of the distribution of preferred tax rates. In most countries, the majority of individuals with preferred tax schedules below actual tax schedules also report that they would like the government to reduce taxes even if this means reducing spending on social services [see Table 10; details to be added]

7 Conclusion

Quantifying tastes for redistribution is an important step in better understanding the preferences that underlie actual tax and transfer systems. These findings have implications for the measurement of preferences for redistribution, the quantification of preference heterogeneity in the population, and models of the political process.

Although numerous social surveys contain categorical questions about redistributive preferences, virtually no surveys contain questions of the type studied here. These results suggest that individuals are able to give responses to such quantified questions that produce

reasonable budgets sets and correlate closely to conventional measures. This suggests the potential for broader application of survey questions of this form, particularly if combined with additional questions about perceptions of actual redistributive systems.

These findings also allow provide information with which to interpret responses to categorical preference measures. In particular, reporting strong disagreement with the idea that the government should redistribute income does not correspond to preferring a regressive or even proportional tax schedule, and the variation in categorical measures that can arise from variation in preferred tax progressivity is modest.

The results suggest a limited role for self-interest in the determination of preferences for redistribution. The majority of individuals (including those with high levels of education and income) prefer progressive tax schedules, and the differences in preferred progressivity across economic subgroups are modest. Average differences between political subgroups are also small, which is consistent with a generally observed narrow policy space for tax system reforms.

These measures also allow the construction of aggregated preferred tax schedules that can be directly compared to actual tax schedules. Actual tax schedules imply a larger size of government than preferred schedules in every country, but actual schedules often reflect preferred progressivity surprisingly well. It does not appear that the gap in tax levels can be fully explained by varying the preference aggregation weights or by individual misperceptions of the tax schedule. The findings therefore lend suggestive support to Leviathan models of government.

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Data Appendix

A1. International Social Survey Program (ISSP)

English translations of the exact survey questions on tax preferences asked in each country are as follows:

Australia: not available

Czech Republic:

How much taxes should a person pay on the whole monthly if they earn about 5,000 Kč [crowns] a month?
And how much should be paid on the whole monthly by a person who earns 10,000 Kč a month?
And someone who earns 20,000 Kč a month, how much should they pay on the whole monthly in taxes?
And how much should be paid by a person who earns 40,000 Kč a month?

Hungary:

In your opinion, **how many forints of tax should a person pay** whose monthly gross (before tax) salary is... [followed by a table with gross salary and monthly tax]

Italy:

What total amount of taxes per year should in your opinion be paid by a person earning 26,500,000 gross income per year?

For the interviewer: by taxes we mean here all forms of taxation, from the payroll taxes to the indirect taxes on consumption goods. By social services we mean all government activities related to health care, social security, pensions and education. [Note: it is not clear why the second sentence is included; there is no mention of social services in these questions]

And a person who earns 53 million gross income per year. How much should they pay in taxes per year?
And a person who earns 106 million gross income per year. How much should they pay in taxes per year?
And a person who earns 212 million gross income per year. How much should they pay in taxes per year?

New Zealand:

How much tax per year, if any, do you think someone who earns \$20,000 [NZD] should pay? We mean all taxes that are deducted from a person's wages, such as PAYE and ACC levies.²⁵
And what about someone who earns \$40,000? How much tax should they pay per year?
And what about someone who earns \$80,000? How much tax should they pay per year?
And what about someone who earns \$160,000? How much tax should they pay per year?

Poland:

What total amount of tax per year, if any at all, should in your opinion be paid by a person earning 10,000 PLN a year? By taxes, we mean all personal income taxes.
And what total amount of tax should be paid by a person earning 20,000 PLN?
And what total amount of tax should be paid by a person earning 40,000 PLN?
And what total amount of tax should be paid by a person earning 80,000 PLN?

Spain:

What amount of taxes per year do you think a person should pay, if they earns a gross annual wage of 1.5 million? Or should they not pay anything? (We are referring to all taxes deducted from the salary, meaning, the payroll taxes (withholding from salary) and the income taxes – IRPF).
Interviewer: If the interviewee is not capable of naming a quantity in pesetas that should be paid as taxes, they should try to name a percentage: for example: "they should pay in taxes 10% of the earned salary". If they don't mention a quantity in pesetas or a percentage, make a note in the appropriate box.
And a person how's gross annual salary is double the previous, meaning 3 million? How much should they pay in taxes in this case?
And if the gross annual wage were double the previous one, meaning 6 million? How much should they pay in taxes in this case?
And if the gross annual salary were double the previous one, meaning 12 million? How much should they pay in taxes in this case?

²⁵ PAYE (Pay As You Earn) is the main form of income tax in New Zealand. ACC is a levy collected on behalf of the Accident Compensation Corporation to cover non-work related injuries.

A2. Luxembourg Income Study (LIS)

The data on personal income and unemployment comes from the Luxembourg Income Study Database (LIS Database). The LIS Database is a cross-national archive which contains micro level data from surveys done at various points in time. The data comes from the Wave IV of surveys, comprising of surveys undertaken around 1995:

Australia: 1995 Survey of Income and Housing Costs (SIHC),
Czech Republic: 1996 Czech Microcensus
Hungary: 1994 Household Monitor Survey
Italy: 1995 Survey on Household Income and Wealth (SHIW)
New Zealand: no data
Poland: 1995 Household Budget Survey
Spain: 1995 Spanish European Community Household Panel / *ES ECHP*

The income variable used is the net individual cash wage and salary income (PNWAGE) net of employer and employee social insurance contributions and taxes (where gross wage was available instead of net wage, the gross wage variable-PGWAGE- was used). The variable is measured for all employed individuals over the period that was considered most accurate (usually monthly or weekly) and it is annualized in the data. The income is measured in units of national currency, except for Italy (measured in thousands of national currency) and the Czech Republic (measured in hundreds of national currency). The data on unemployment comes from two categorical variables which record the unemployment status of the sampled individuals: PCLFS (for Australia) and PLF (for the rest of the sample). Several variables were used to differentiate between part-time and full-time workers, as listed below:

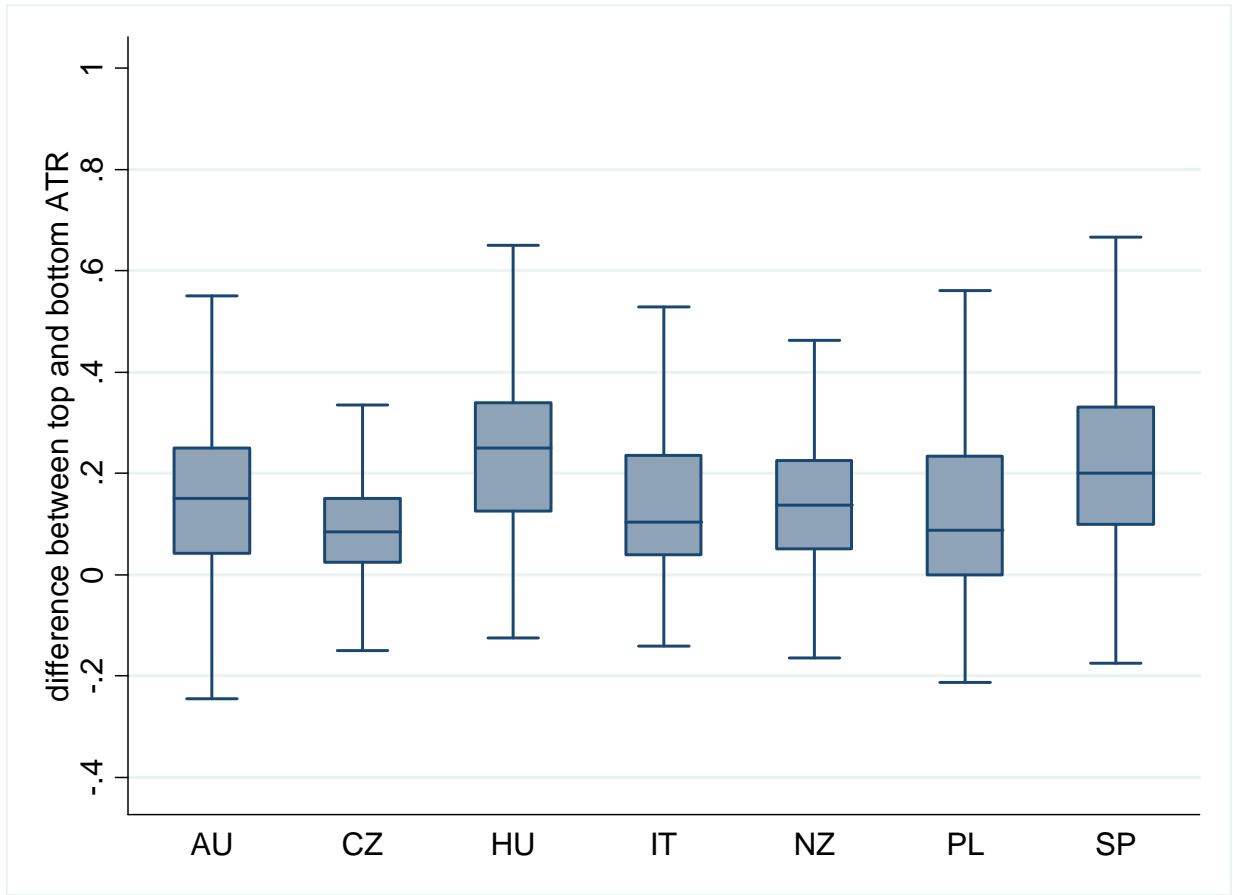
Australia: PFULPAR (part-time or full-time employment) and PWEEKTL (number of weeks worked in the previous year, equals 52 if the individual was not unemployed during the past year);
Czech Republic: PHOURS (number of hours worked in a week, ≥ 35 if full-time);
Hungary: PHOURS;
Italy: PHOURS and PWEEKFT (no. of weeks worked full-time in a year; 52 if the employed individual worked only full-time);
Poland: no other variables available, PLFS was used to determine employment status;
Spain: PWEEKTF

The results are weighted by the individual weights provided in the surveys (the PWEIGHT variable).

A3. The OECD Database on Taxing Wages

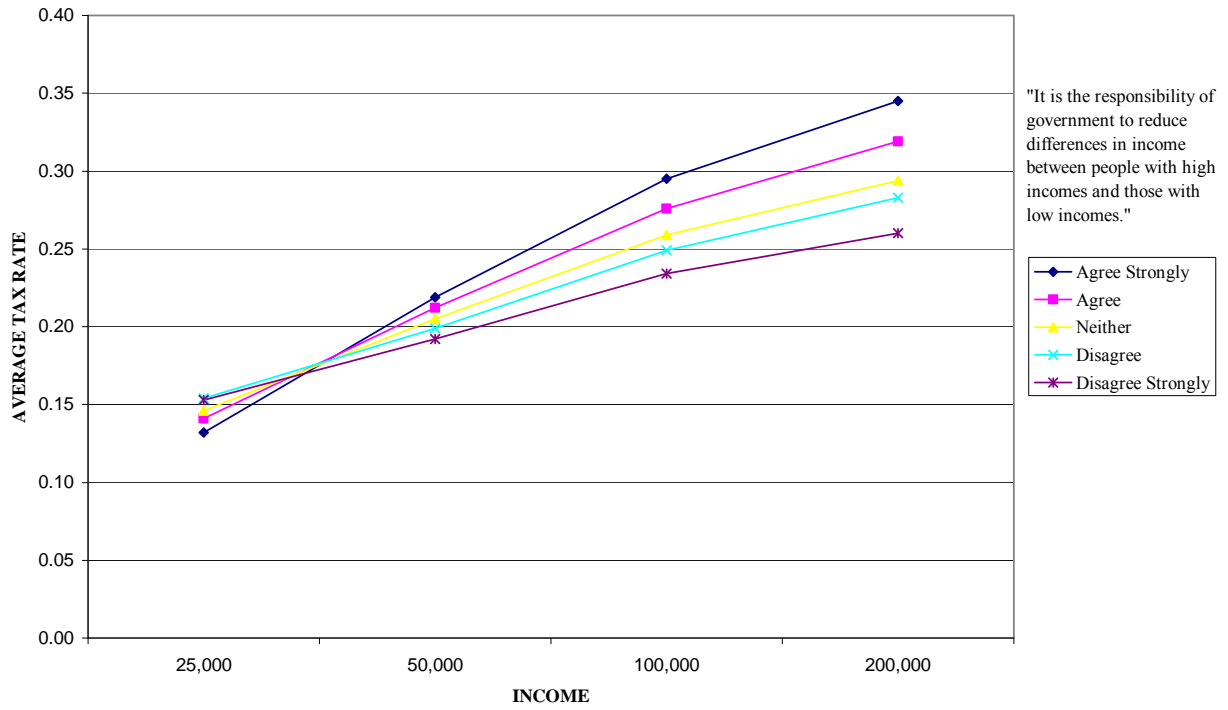
The data on actual tax rates come from the OECD Database on Taxing Wages (1996). The database reports central government personal income tax rates, standard allowances/credits, and tax thresholds. The information is applicable to a single person with no dependents. Italy and Spain have subcentral taxation which is not incorporated. Average tax rates are calculated by applying the appropriate allowances, thresholds and marginal rates.

FIGURE 1
Difference Measure of Preferred Progressivity by Country



Notes: The country codes are as follows: AU (Australia), CZ (Czech Republic), HU (Hungary), IT (Italy), NZ (New Zealand), PL (Poland), SP (Spain). The difference measure is the difference between the preferred average tax rate at the highest and lowest levels of income. Because the survey income levels correspond to different percentiles in the country income distributions, the variation in preferred progressivity should not be compared directly across countries. The boxplots display the median, interquartile range, and upper and lower adjacent values. Outside values are omitted.

FIGURE 2
Relation Between Preference Measures: Australia



Notes: The schedules shown are median preferred schedules, derived from taking the median preferred average tax rate within each category of agreement at each income level.

FIGURE 3A: AUSTRALIA
Average Tax Rate per ISSP Income Level (Actual ATR and Median Preferred)

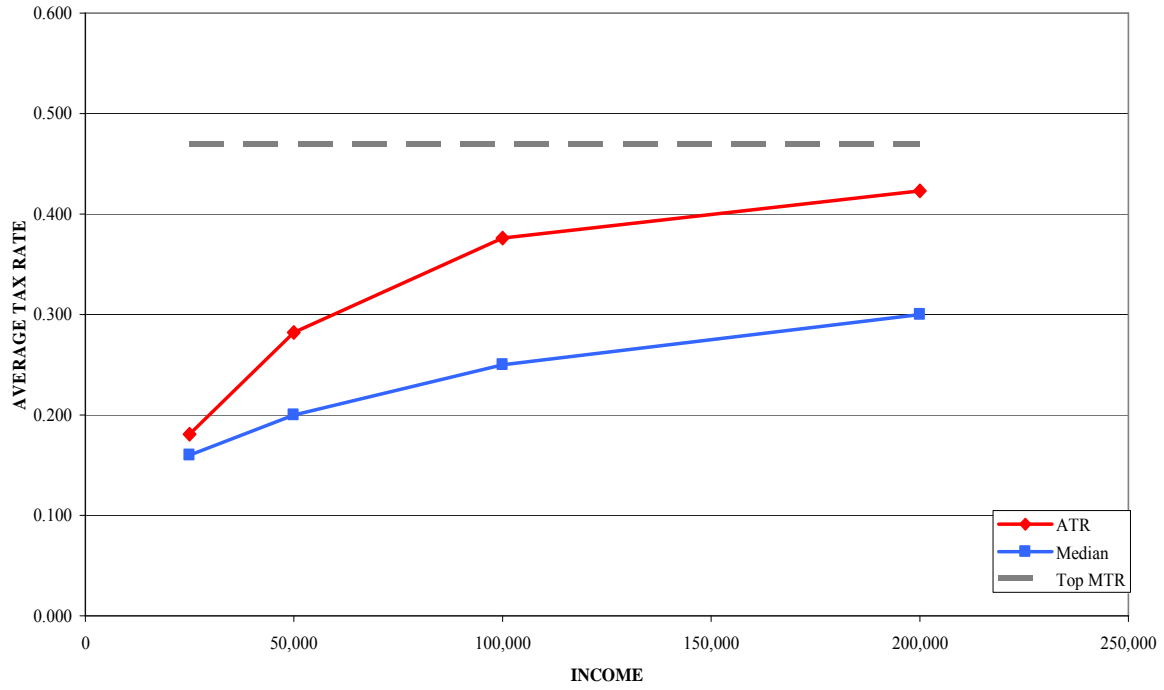


FIGURE 3B: CZECH REPUBLIC
Average Tax Rate per ISSP Income Level (Actual ATR and Median Preferred)

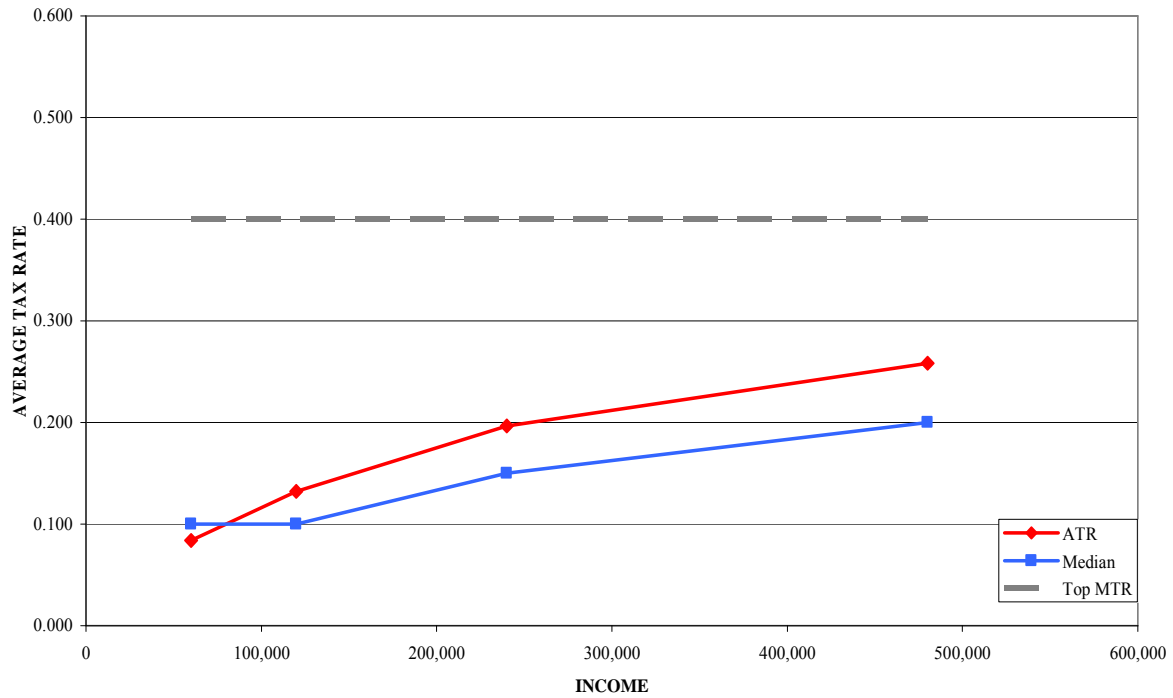


FIGURE 3C: HUNGARY
Average Tax Rate per ISSP Income Level (Actual ATR and Median Preferred)

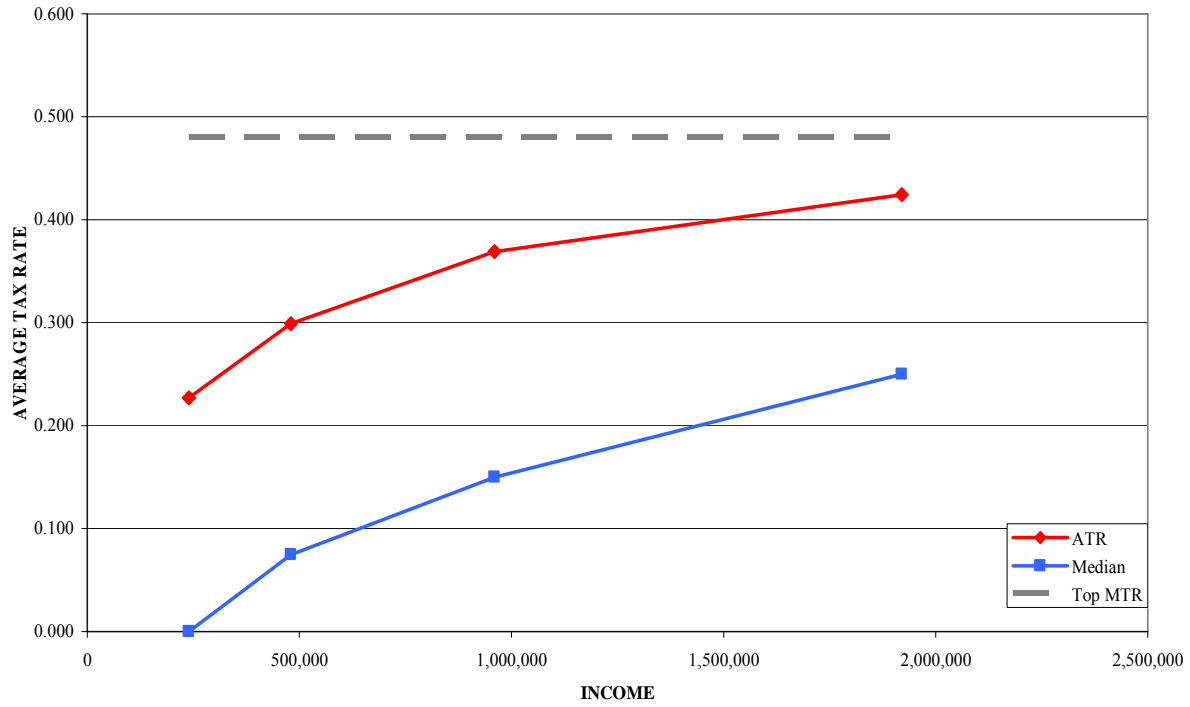


FIGURE 3D: ITALY
Average Tax Rate per ISSP Income Level (Actual ATR and Median Preferred)

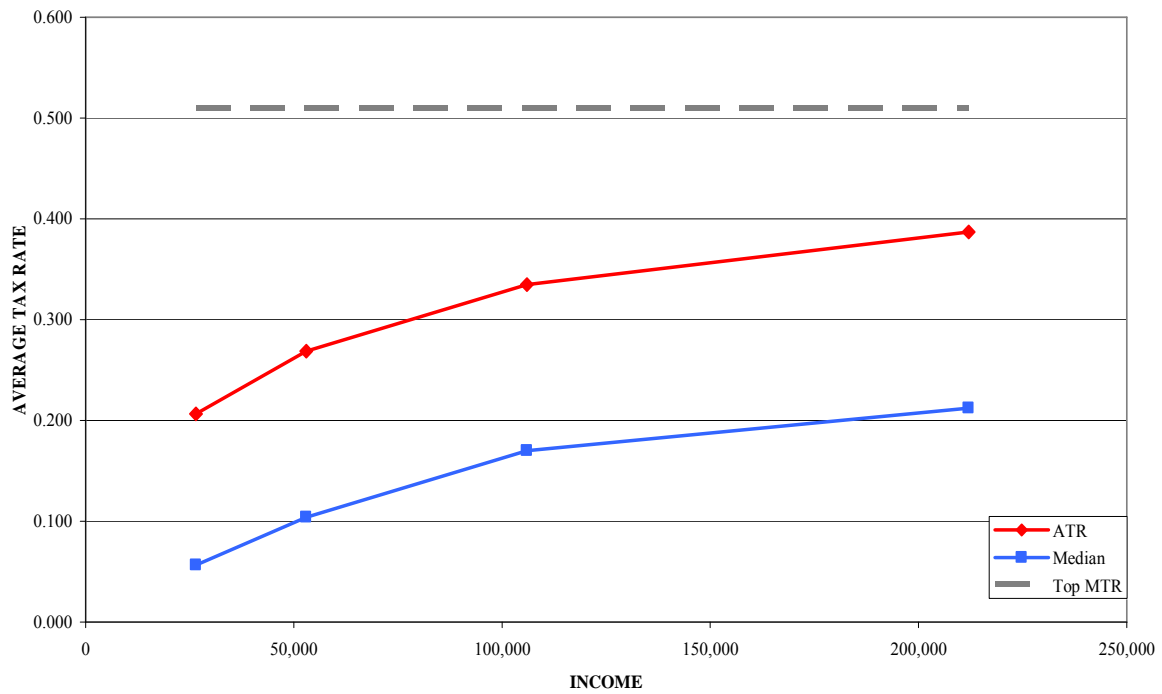


FIGURE 3E: NEW ZEALAND
Average Tax Rate per ISSP Income Level (Actual ATR and Median Preferred)

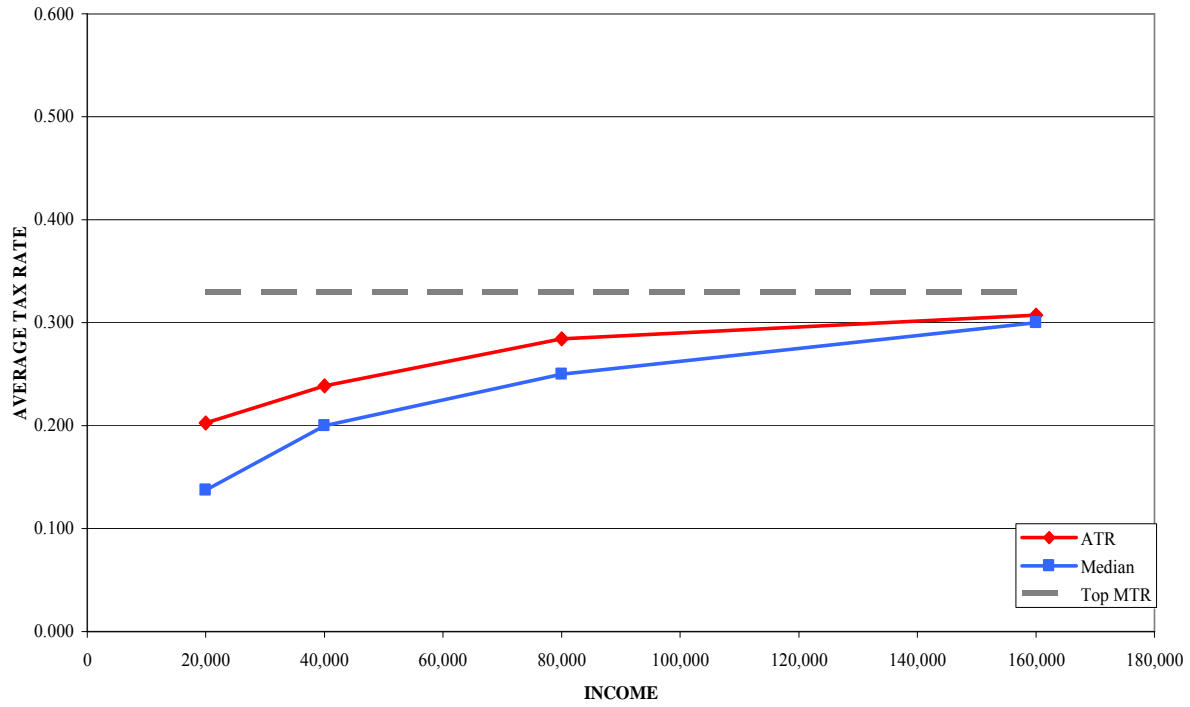


FIGURE 3F: POLAND
Average Tax Rate per ISSP Income Level (Actual ATR and Median Preferred)

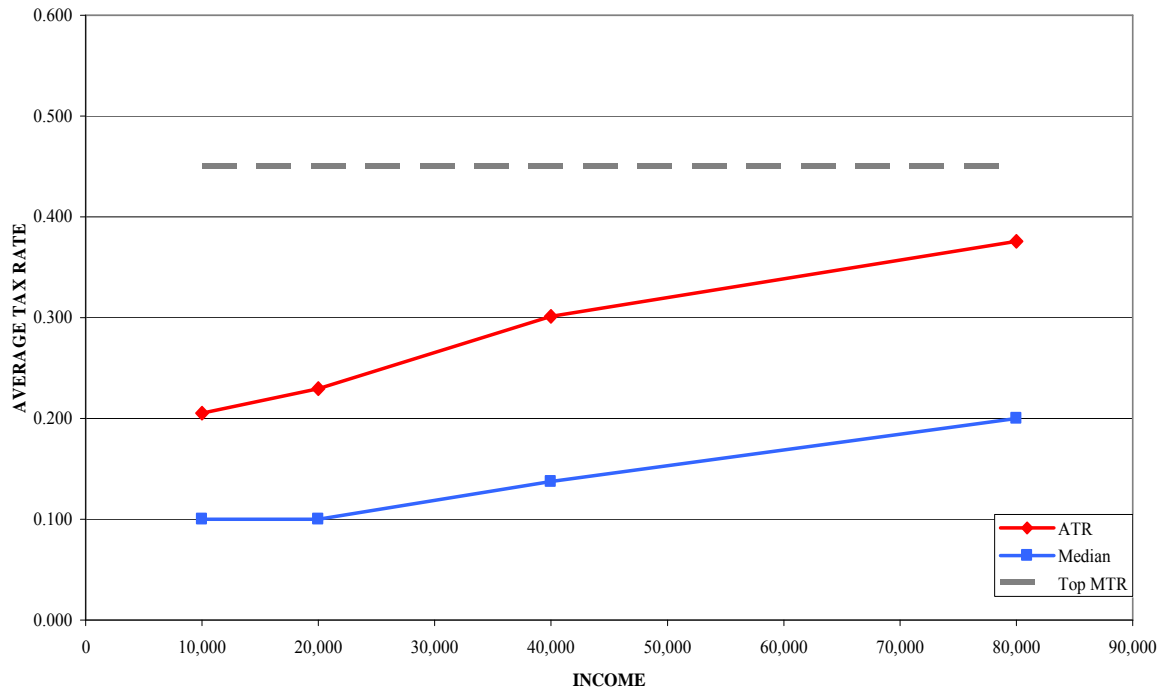


FIGURE 3G: SPAIN
Average Tax Rate per ISSP Income Level (Actual ATR and Median Preferred)

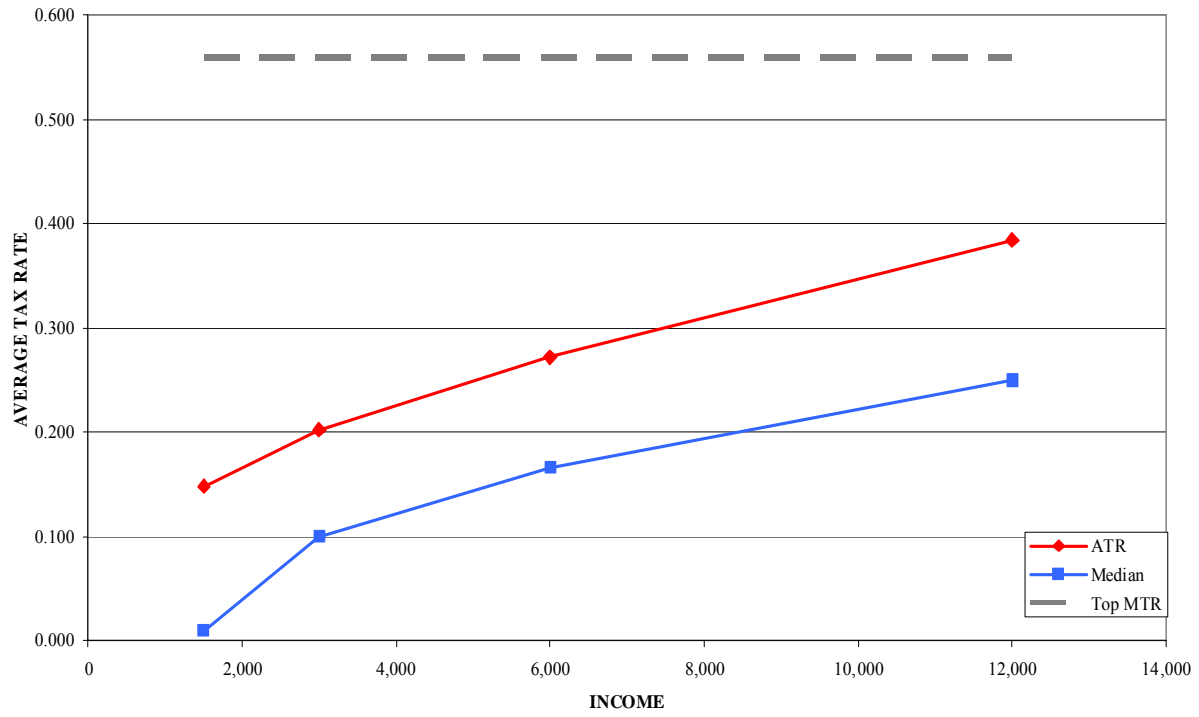


TABLE 1
Taxes and Transfers in Sample and Non-sample OECD Countries

	Govt Spending % GDP (1996)	Transfers % GDP (1996)	Top Individual MTR (1996)	Personal Income Tax % of Total Tax Revenue (1996)
<u>Sample Countries:</u>				
Australia	37.0	13.0	47.0	40.6
Czech Republic	42.4	15.4	40.0	12.8
Hungary	52.1	19.0	48.0	16.1
Italy	52.5	19.1	51.0	26.0
New Zealand	41.1	18.1	33.0	45.0
Poland	51.0	21.2	45.0	22.9
Spain	43.0	15.7	56.0	23.6
<hr/>				
Average for Sample Countries	45.6	17.3	45.7	26.7
<hr/>				
<u>Other OECD Countries:</u>				
France	54.5	23.8	-	11.4
Germany	49.3	22.6	53.0	27.5
Sweden	64.8	26.2	30.0	33.5
United Kingdom	43.1	18.1	40.0	28.8
United States	36.5	15.4	39.6	35.8
<hr/>				
Average for all Non-sample OECD Countries	46.7	18.2	42.1	27.2

Notes: Data on government spending and transfers come from the OECD Economic Outlook No. 80 (2006). Transfers refers to social benefits and other current transfers. Data for Mexico and Turkey are not available. Data on individual marginal tax rates come from the World Tax Database assembled by the Office for Tax Policy and Research. In most cases, these rates refer to the top federal marginal tax rate; please see documentation on the World Tax Database for further details. Data for France and Iceland are not available. Statistics on personal income tax as a share of total income tax come from the OECD Revenue Statistics, 1965-2006 (2007 edition). Data for Mexico and the Slovak Republic are not available.

TABLE 2
Sample Summary Statistics

	Sample	Population (LIS)
<u>Australia</u> (N=1523)		
% female	44.5	50.6
age (mean)	49.5	43.4
% completed college	20.6	14.0
<u>Czech Republic</u> (N=751)		
% female	48.1	52.4
age (mean)	47.1	45.7
% completed college	11.5	8.7
<u>Hungary</u> (N=1295)		
% female	51.2	53.4
age (mean)	44.0	45.9
% completed college	14.2	12.1
<u>Italy</u> (N=853)		
% female	49.8	52.4
age (mean)	44.0	46.8
% completed college	6.1	6.2
<u>New Zealand</u> (N=731)		
% female	42.9	N/A
age (mean)	45.2	N/A
% completed college	17.1	N/A
<u>Poland</u> (N=400)		
% female	45.0	55.4
age (mean)	45.7	47.2
% completed college	10.3	7.4
<u>Spain</u> (N=1402)		
% female	43.4	51.5
age (mean)	42.0	45.7
% completed college	17.8	10.3

Notes: Population statistics come from the LIS person files, restricted to the 18+ sample. The classification of educational attainment varied across surveys, both within the ISSP and the LIS. The share of respondents having completed college is the measure that can be coded most consistently across countries. However, some of the variation across countries and between the survey sample and the LIS may still be a result of these classification differences. Within the ISSP, the % completed college was higher for the sample for which tax preference data are available relative to the rest of the sample in all countries except Italy.

TABLE 3
Individual Preferred Tax Schedules (% of total responses)

	All	AU	CZ	HU	IT	NZ	PL	SP
Strictly Progressive	37.97	34.27	21.04	34.21	32.47	37.62	23.50	62.20
Weakly Progressive	35.37	34.27	41.01	48.49	34.11	34.75	32.25	23.40
Proportional	7.15	13.85	7.06	1.78	1.99	12.86	14.25	3.00
Weakly Regressive	2.11	1.77	3.73	1.16	2.23	2.33	6.00	1.21
Strictly Regressive	0.78	0.39	1.33	0.39	0.82	0.82	3.00	0.57
Poll Tax	0.06	0.13	0.00	0.00	0.00	0.00	0.25	0.07
No income tax	0.79	0.26	0.00	0.93	1.06	0.68	1.25	1.43
N	6955	1523	751	1295	853	731	400	1402

Notes: A strictly progressive schedule is one in which implied average tax rates increase over every income interval. A weakly progressive schedule is one in which implied average tax rates are non-decreasing and increasing over at least one income interval. Proportional schedules are schedules in which average tax rates are the same at every level of income. Strictly regressive schedules are schedules in which average tax rates are decreasing over every income interval; weakly regressive schedules are defined analogously to weakly progressive schedules. Poll tax schedules are schedules in which the tax level is the same at every income level. Figures in each column do not add up to 100% because some individuals report preferred schedules that are regressive over some income intervals and progressive over others.

TABLE 4
Tax Preferences: Summary Statistics

	Preferred Average Tax Rates			
	Income=x	Income=2x	Income=4x	Income=8x
<u>Australia</u>				
%ile of the inc. dist.	34.20	89.52	98.97	99.81
median	0.16	0.20	0.25	0.30
mean	0.15	0.21	0.26	0.30
standard deviation	0.08	0.08	0.11	0.14
<u>Czech Republic</u>				
%ile of the inc. dist.	11.76	60.22	95.10	99.46
median	0.10	0.10	0.15	0.20
mean	0.11	0.13	0.16	0.20
standard deviation	0.06	0.06	0.08	0.10
<u>Hungary</u>				
%ile of the inc. dist.	30.23	72.91	92.40	97.95
median	0.00	0.08	0.15	0.25
mean	0.03	0.08	0.17	0.26
standard deviation	0.06	0.08	0.10	0.14
<u>Italy</u>				
%ile of the inc. dist.	48.28	92.11	99.22	99.98
median	0.06	0.10	0.17	0.21
mean	0.08	0.13	0.19	0.23
standard deviation	0.07	0.10	0.14	0.16
<u>New Zealand</u>				
%ile of the inc. dist.	N/A	N/A	N/A	N/A
median	0.14	0.20	0.25	0.30
mean	0.13	0.19	0.24	0.28
standard deviation	0.08	0.07	0.09	0.11
<u>Poland</u>				
%ile of the inc. dist.	N/A	N/A	N/A	N/A
median	0.10	0.10	0.14	0.20
mean	0.10	0.13	0.17	0.22
standard deviation	0.09	0.10	0.12	0.16
<u>Spain</u>				
%ile of the inc. dist.	14.43	63.82	93.58	99.07
median	0.01	0.10	0.17	0.25
mean	0.04	0.11	0.18	0.26
standard deviation	0.05	0.08	0.11	0.16

Notes: “x” is meant to be the country-specific average annual wage of a full-time unskilled worker; the actual income levels were chosen by the national survey organization. Preferred average tax rates are calculated as the preferred amount of tax divided by the relevant income level. The percentile of the income distribution is calculated from LIS data restricting the sample to full-time workers. LIS data on gross income is only available for Australia and the Czech Republic; percentiles for the remaining countries are constructed by converting the ISSP income levels into net income using federal average tax rates from the OECD tax database and then calculating the corresponding percentiles in the net income distribution. For further details please refer to the Data Appendix.

TABLE 5
Relation Between Preference Measures
 Dependent variable is the difference between top and bottom ATR

Panel A									
	All	All	AU	CZ	HU	IT	NZ	PL	SP
One unit move toward “disagree strongly”	-0.022** (0.001)	-0.019** (0.001)	-0.026** (0.003)	-0.011** (0.003)	-0.014** (0.004)	-0.013** (0.004)	-0.026** (0.003)	-0.019* (0.008)	-0.018** (0.004)
Country fixed effects	N	Y							
Panel B									
	All	All	AU	CZ	HU	IT	NZ	PL	SP
<i>Omitted Category:</i> “agree strongly”									
“agree”	-0.028** (0.005)	-0.028** (0.005)	-0.035** (0.011)	-0.023* (0.009)	-0.023* (0.010)	-0.039** (0.013)	-0.037* (0.017)	-0.019 (0.190)	-0.032** (0.010)
“neither”	-0.058** (0.006)	-0.053** (0.006)	-0.065** (0.012)	-0.035** (0.011)	-0.048** (0.012)	-0.075** (0.017)	-0.065** (0.018)	-0.065* (0.029)	-0.046** (0.016)
“disagree”	-0.062** (0.005)	-0.053** (0.005)	-0.083** (0.011)	-0.025* (0.011)	-0.030* (0.014)	-0.320* (0.016)	-0.075** (0.015)	-0.034 (0.032)	-0.055** (0.015)
“disagree strongly”	-0.095** (0.007)	-0.081** (0.007)	-0.106** (0.013)	-0.059** (0.015)	-0.060** (0.021)	-0.052** (0.019)	-0.118** (0.017)	-0.087⁺ (0.045)	-0.055⁺ (0.031)
Country fixed effects	N	Y							
N	6796	6796	1489	741	1285	831	704	380	1366

TABLE 6
Tax Preferences and Voting

Dependent variable is voting on a left-right scale (1=far right; 5=far left)

	All	All	AU	CZ	NZ	PL	SP
One unit increase in ATR difference	0.87** (0.13)	0.49** (0.13)	0.74** (0.19)	1.42** (0.53)	1.31** (0.35)	0.54 (0.36)	0.79** (0.24)
One unit move toward “agree strongly”		0.23** (0.01)					
Country fixed effects	Y	Y					
R-squared	0.05	0.12	0.01	0.01	0.02	0.01	0.01
N	3674	3585	1373	530	656	234	881

Notes: Voting classifications are derived from the political parties for which individuals voted; the left-right classification follows the ISSP classification.

TABLE 7
Determinants of Individual Preferences for Redistribution

Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)
	ATRdif	Categ.	ATRdif	Categ.	ATRdif	Categ.
Age	0.001** (0.0001)	0.006** (0.001)	0.001** (0.0001)	0.005** (0.001)	0.001** (0.0001)	0.007** (0.001)
Female	-0.010** (0.004)	0.134** (0.03)	-0.009* (0.004)	0.109** (0.031)	-0.009* (0.004)	0.121** (0.031)
Yrs of Schooling	0.001 (0.001)	-0.054** (0.005)	0.001 (0.001)	-0.052** (0.005)		
College Completion					0.006 (0.005)	-0.323** (0.041)
Divorced/Separated/ Widowed	-0.012* (0.006)	0.074 (0.049)	-0.012* (0.006)	0.064 (0.049)	-0.012* (0.006)	0.080 (0.049)
Never Married	-0.015** (0.005)	0.138** (0.049)	-0.015* (0.006)	0.115* (0.049)	-0.014* (0.006)	0.079 (0.049)
Part Time Employment			-0.008 (0.007)	0.078 (0.058)	-0.008 (0.007)	0.072 (0.058)
Unemployed			-0.005 (0.008)	0.246** (0.063)	-0.005 (0.008)	0.259** (0.063)
Other Employment Status			-0.003 (0.005)	0.118** (0.038)	-0.003 (0.004)	0.118** (0.038)
Country fixed effects	Y	Y	Y	Y	Y	Y
R-squared	11.57	14.05	11.59	14.32	11.58	13.76
N	6796	6796	6796	6796	6796	6796

Notes: ATRdif refers to preferred progressivity measured by the difference between top and bottom preferred average tax rates. Categ refers to the 5 unit categorical measure where 1 and 5 are strong disagreement and strong agreement with the importance of the role of government in redistributing income, respectively.

TABLE 8
Income and Preferred Progressivity
Dependent variable: Difference between Top and Bottom Preferred ATR

	<u>Australia</u>			<u>New Zealand</u>		
	(1)	(2)	(3)	(4)	(5)	(6)
Ln income	-0.005 (0.005)	-0.011* (0.005)		-0.009 (0.007)	-0.008 (0.007)	
Income (000s)			-3.15e-04* (1.36e-07)			-4.06e-04 ⁺ (2.29e-07)
Yrs of Schooling		0.005** (0.001)	0.005** (0.001)		-0.001 (0.001)	-0.001 (0.001)
Age	0.002** (0.0003)	0.002** (0.0003)	0.002** (0.0003)	0.001** (0.0004)	0.001** (0.0004)	0.001** (0.0004)
Female	-0.02* (0.008)	-0.023** (0.008)	-0.022** (0.008)	0.007 (0.01)	0.008 (0.01)	0.006 (0.01)
Divorced/Separated /Widowed	-0.014 (0.013)	-0.010 (0.013)	-0.011 (0.013)	-0.029 ⁺ (0.015)	-0.029 ⁺ (0.015)	-0.029 ⁺ (0.015)
Never Married	-0.008 (0.011)	-0.011 (0.011)	-0.011 (0.011)	-0.027 ⁺ (0.014)	-0.026 ⁺ (0.014)	-0.027 ⁺ (0.014)
R-squared	5.11	6.25	6.27	5.58	5.68	5.94
N	1406	1406	1406	712	712	712

TABLE 9
Preferred and Actual Tax Schedules

	AU	CZ	HU	IT	NZ	PL	SP
Dif. between top and bottom ATR							
Actual	0.24	0.17	0.20	0.18	0.10	0.17	0.24
From median preferred schedule	0.14	0.10	0.25	0.15	0.16	0.10	0.24
From median preferred difference	0.15	0.09	0.25	0.10	0.14	0.09	0.20
Segment 1							
Actual	0.10	0.05	0.07	0.06	0.04	0.02	0.05
From median preferred schedule	0.04	0.00	0.08	0.04	0.06	0.00	0.09
Segment 2							
Actual	0.09	0.07	0.07	0.07	0.05	0.07	0.07
From median preferred schedule	0.05	0.05	0.07	0.07	0.05	0.04	0.07
Segment 3							
Actual	0.05	0.06	0.06	0.05	0.02	0.07	0.11
From median preferred schedule	0.05	0.05	0.10	0.04	0.05	0.06	0.08
N	1523	751	1295	853	731	400	1402

Notes: Actual differences are derived from the OECD database on Taxing Wages. Differences derived from the median preferred schedule take the difference in median preferred average tax rates at the relevant income levels. The median preferred difference takes the median difference between preferred average tax rates at the relevant income levels. Segments 1, 2 and 3 refer to the portions of the tax schedule between the first and second, second and third, and third and fourth survey income levels, respectively.

TABLE 10
Voter Misperceptions and Preferred Tax Schedules

	All	AU	CZ	HU	IT	NZ	PL	SP
Reduce Taxes	56.3	63.1	38.9	73.2	60.9	51.9	56.2	40.3
More Social Services	43.7	37.0	61.1	26.8	39.1	48.1	43.8	59.7
Preferred < Actual	60.5	46.4	22.0	83.5	74.0	44.5	74.5	69.2
Preferred > Actual	4.2	7.6	11.8	0.2	1.5	6.6	2.2	1.5
More Social Services Preferred<Actual	39.5	33.7	62.2	26.2	34.7	36.5	42.7	58.8
More Social Services & Preferred < Actual	23.9	15.6	13.7	21.7	25.6	16.4	31.8	40.7
N	5722	1337	542	1081	741	578	274	1169

Notes: Individuals were asked the following question: If the government had a choice between reducing taxes or spending more on social services, which do you think it should do? (We mean all taxes together, including wage deductions, income tax, tax on goods and services and all the rest). The choices are: 1) reduce taxes, even if this means spending less on social services; 2) spend more on social services, even if this means higher taxes. Figures given in the table are percent of respondents.