The Size and Shape of Government
Preferences over Redistributive Tax Policy

Lucy Barnes, University College London, UK.

Abstract

Why do some people support government redistribution more than others? This article addresses this question with reference to attitudes towards redistributive tax policy. In doing so, it identifies an important distinction between preferences over the level of taxation and preferences over its structure. Using individual level survey data from 17 advanced industrial countries, I find `decoupling' of pro-redistributive attitudes over the size versus the shape of government. The modal respondent prefers higher progressivity (more redistribution) but lower tax levels (less redistribution). Further, this decoupling varies across countries: preferences over tax levels have a greater effect on progressivity preferences in less progressive tax systems. I examine how theories of redistribution preferences help understand this disconnect, and show that income and risk affect progressivity preferences as they do attitudes towards redistribution. In contrast, trust affects preferences over tax levels in the same way as it affects redistribution preferences.

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Correspondence: lucy.c.barnes@gmail.com

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The Size and Shape of Government: Preferences over Redistributive Tax Policy

1. Introduction

Who supports government efforts to reduce inequality? Understanding variation in individual preferences for redistribution has driven an important research agenda in political science (Cusack *et al.* 2005; Iversen and Soskice 2001; Rehm 2009, 2011; Gingrich and Ansell 2012), sociology (Brooks and Manza 2007; Jaime-Castillo and Saez Lozano 2010; Martin and Gabay 2013; Svallfors 1997, 2002) and economics (Alm and Torgler 2006; Lago-Peñas and Lago-Peñas 2010). Differences across individuals in their income levels, the risks they face, and their trust in others all predict attitudes towards redistribution and welfare state spending.

Yet the level of redistribution is not directly under government control. Even ignoring non-policy factors, redistribution depends on decisions on taxes and spending, and not only on the levels of revenue involved but how collection and disbursement are structured. In this article I argue that to understand public attitudes towards redistribution we must separate preferences over the size of government from attitudes towards its shape. In contrast to much of the literature, I also focus on how citizens perceive the revenue-raising side of government. The logic of material self-interest that underpins redistribution attitudes do not necessarily have the same implications for preferences over progressivity and tax levels, despite the fact that increasing either will increase redistribution.

Using data from the International Social Survey Program (ISSP)'s 2006 `Role of Government' survey, I analyse preferences over taxation in 17 advanced industrial countries (ISSP Research Group, 2006). I find important differences between preferences over the size and shape of government, not least that pro-redistributive reforms to progressivity command much greater support than increases in tax levels. I make some sense of this disconnect by considering which individuals benefit materially from each type of change. The logics of income and risk associated with redistribution preferences are found to operate more strongly on progressivity preferences. In contrast, trust acts on redistributive attitudes by increasing support for higher levels of taxation.

Finally, I consider whether these findings vary with the national context. While overall levels of support (particularly for progressivity) do vary, there is little evidence that differences are related to the structure of taxation or to welfare regimes. I find little evidence that national contexts affect the relationships between individual characteristics and attitudes. However, the decoupling of the two dimensions of redistributive tax policy does vary with national tax structures: in countries with more progressive taxation, attitudes over tax levels have less impact on the probability of preferring more progressive structures.

My contribution here is threefold. First, I add theoretical nuance to the literature on preferences over redistribution by differentiating the size from the structure of government. This distinction is not novel in terms of macro-policies, as the `paradox of redistribution' attests (Korpi and Palme, 1997), but it represents an important distinction in individual preferences as well. Second, I examine tax policy preferences under the light of theories of redistribution, where pride of place has typically been given to social policy spending (Rehm 2009, 2011; Gingrich and Ansell 2012). Even the `stylized facts' about tax attitudes across individuals and countries are less well-understood than their spending counterparts, thus my focus on tax policy serves a descriptive purpose. Finally, and more speculatively, these results may give hope to egalitarian governments in times of austerity, when both economic realities and public opinion militate against large government. On the political side at least, there is room for redistributive manoeuvre in increasing the targeting of taxation and spending to serve the least well-off (Kenworthy 2011).

2. Preferences over Redistribution and Taxation

Redistribution has large effects not only on economic inequality but on inequalities in well-being more broadly construed (Barnes and Hall, 2013). But while taxation constitutes one side of the government budget, comparative studies of tax attitudes have yet to be incorporated into studies of redistribution preferences. Lessons from that literature should inform our expectations, thus I summarize it, and the relevant empirical literature on tax attitudes, here.

2.1 Spending and Redistribution Preferences: Income, Risk, Trust

The literature on government redistribution highlights the importance of material self-interest in shaping preferences, not to the exclusion of other influences, but with greater confidence in causal direction from deducing positions from objective characteristics (Gingrich and Ansell, 2012). Material conflict over redistributive policy divides individuals primarily according to income and risk exposure, which may be correlated to varying degrees (Rehm *et al.*, 2012).

Individuals' income is an important driver of attitudes in approaches to redistribution in economics, sociology and political science. Economic analyses of the size of government predict differentiation of redistributive attitudes by income (Romer 1975, Meltzer and Richard 1981). Power resources approaches, explaining cross-national variation in welfare state generosity, hinge upon the relative power of the poorer, working class (Esping-Andersen 1990, Huber and Stephens 2001, Korpi 1983); while other sociological approaches to attitudes have confirmed variation in attitudes along class lines (Svallfors 1997). Class and income are not synonymous, but a logic of economic insecurity underpins working-class demands for social protection. Meanwhile, recent political science treatments consider low relative income as a motive for reducing inequality (Kenworthy and Pontusson 2005, Iversen and Soskice 2006). These approaches all maintain that high income individuals are more likely to oppose redistribution. Current empirical work automatically includes controls for income when trying to identify other characteristics' effects (Cusack *et al.*, 2005; Iversen and Soskice 2001; Gingrich and Ansell, 2012; Rehm *et al.*, 2012). Recent evidence also indicates that the very rich in the United States are more resistant to progressive changes to taxation, and more sanguine about cuts to major spending programs (Page *et al.*, 2013).

The second piece of the materialist account is that redistributive policy preferences depend on individual risk profiles. Redistribution serves insurance functions (Barr 2001; Moene and Wallerstein 2001). By compressing after-tax incomes, redistribution (including progressive taxation) smooths income volatility (Varian 1980). Some policies are specifically targeted to insure against income and employment risks. High risk, whether due to specific skills (Iversen and Soskice 2001), high unemployment risk, or actual unemployment (Cusack *et al.*, 2005, Rehm 2011) increases support for redistribution and social policy spending. Insurance motives also help explain the impact of less obviously `material' characteristics. Scheve and Stasavage (2006) argue that religion provides insurance that substitutes for state policy, explaining why more religious individuals prefer lower government redistribution.

2.2 Tax Attitudes

Studies focus on taxation tend to be less oriented towards questions redistribution. Rather, the dominant puzzle is citizens' voluntary compliance in the absence of heavy-handed coercion (Daunton 2001). `Tax morale' reflects ideas about the legitimacy and fairness of taxation, and variation in governments' ability to extract revenue. This willingness to accept the legitimacy of existing tax policy differs from my concern with what level is preferred. However, if perceptions of fairness lead to support for different tax levels and structures, their determinants will also affect redistributive preferences.

Cross-national comparisons indicate a correlation between tax acceptance and trust in government, a correspondence replicated at the individual level. Higher trust increases pro-tax attitudes, across individuals (Alm and Torgler 2007) and within countries over time (Hetherington 2005; Alt *et al.*, 2010). Lower trust increases acceptance of tax fraud (Marien and Hooghe, 2005). Svallfors (2002) finds that support for

government intervention in the economy is predicted by high trust in Sweden, Australia and the United States. He also finds a positive effect specifically on tax acceptance, but this analysis is limited to the Swedish case.

Why should trust matter? The underlying logic is self-interested. Political trust allays fears that politicians will expropriate rents to themselves rather than providing goods to benefit the taxpayer. For social trust, even if goods and services are being provided by the government, it is individually rational to free ride on others' tax contributions. Trust that others are not doing so cements willingness to pay.

Finally, one recent paper deals directly with attitudes over tax structures in the context of redistribution. Using the same data set analyzed in this paper, Jaime-Castillo and Saez Lozano (2010) find evidence that support for pro-poor tax policy increases with age, unemployment and exclusion from the labor force; decreases with socio-economic status and self-employment; and exhibits an inverted-U with regard to education level. However, the authors do not include income in their empirical model. Given that the premise of redistributive policy is to change the income distribution, this seriously undermines the analysis.

3. Preferences over taxation: size, structure and the determinants of individual attitudes

Here, I consider preferences over taxation as shaped by its redistributive impact. This means taking the implications of the literature discussed above to data on tax attitudes, to see whether those characteristics associated with preferences for redistributive spending also predict tax policy preferences. Considering tax attitudes also allows for the disaggregation of redistribution preferences into two distinct parts: favoring large government, and favoring progressive structures indicate support for different types of redistributive policy.

Why should we make this distinction? The conceptual difference is not difficult to grasp. The `paradox of redistribution' speaks to an analogous distinction in spending programs. The paradox is that welfare states which target spending programs to the poor do less redistribution because their levels are lower than universal regimes (Korpi and Palme 1998) but recent evidence indicates that this pattern has not held since the mid-1990s (Kenworthy 2011 and Marx *et al.* 2013). For tax attitudes, the difference is highlighted by popular appeals simultaneously claiming that taxes are too high, and that the rich get away too lightly.

Progressivity and the size of taxation are linked by their role in effecting redistribution, but distinct. Assuming no re-ranking of individuals, redistribution can be simply decomposed into the size and structure (Kakwani 1984). As long as taxes are more concentrated on the rich than income, any increase in the share of income taken by government will reduce inequality; similarly, increasing progressivity leads to a greater increase in redistribution the larger the size of taxation.[i]

It is easier to gauge attitudes towards the progressivity of tax structures than that of spending programs because classes of taxpayer are more clearly defined by income-- for example by income tax bracket. Receipt of benefits may be conditioned on income, but often also depends on more complicated `horizontal' characteristics, such as employment status, age, or dependent children.

3.2 Determinants of preferences over tax levels and progressivity

What should we expect from tax attitudes, once we combine existing theories of redistribution preferences with this differentiation between progressivity and levels?

The effect of income translates quite easily to understanding tax progressivity. At any level of spending, higher progressivity imposes a penalty that is increasingly onerous for higher income earners. Thus we should see the same decline in support for progressivity at higher income income levels as is found for redistribution. Similarly for risk: progressivity at any size of government insures incomes through the differential between high payments in good times and low payments in bad. This difference is due to the structure of the system. Further, programs which explicitly insure against income and employment loss tend comprise a small share of government budgets (average spending on such programs in the OECD in 2009 was 10 percent of total government expenditures[ii]). Preferences over tax levels are thus unlikely to be dominated by the implied size of insurance programs. Equally, without an assumption of progressivity it is unclear what effect income should have on attitudes towards government size.

In contrast, separating the size from the structure of taxation makes it clear that trust should primarily affect the former. The less people trust government, the fewer resources they wish to make available to it; low political trust should lead to preferences for low tax levels. Similarly, trusting that others are paying their share should bolster support for high taxes (Daunton, 2001; Edlund, 1999). But it is unclear what a desire to limit governments' scope, and escape free riding, should entail for preferences over progressivity. Greater progressivity could imply either more or less discretion for politicians. A lack of trust in government might signal a lack of faith in politicians as agents of ordinary taxpayers against elites, leading to calls for greater progressivity. The effect of social trust should depend on whether the rich or poor are disproportionately suspected of free riding.

Of the characteristics associated with redistribution preferences, only trust seems to translate to preferences over tax levels. How does the size of government speak to material self-interest? Even for income, the story is more complicated than in the case of progressivity. Higher income is assumed to entail higher tax payments (although overall tax systems are rarely strongly progressive (Prasad and Deng 2009)). But spending programs also shape tax preferences. Beneficiaries of public spending are more supportive of the taxes that finance it (Mettler, 2011).

On the spending side, middle income groups may benefit the most from large government. This prediction arises from simple median voter models, but also from more sophisticated accounts. Vote maximizing parties compete for voters with differing degrees of loyalty, so if voters in the middle are more likely to be `swing' voters, targeting benefits on them has the greatest electoral payoff (Dixit and Londregan 1996, 1998). This `Director's Law' dynamic applies especially to public goods that are also available privately, such as education and public healthcare-- two large spending areas for modern governments (Epple and Romano, 1996; Stigler, 1970; Le

Grand, 1982; Moll and Pamp, 2008; Feld and Schnellenbach, 2007). Support for large government may be inverse-U shaped in income.

Direct benefits from large government also accrue to those in public employment. Public sector workers should thus be more supportive of high taxation. Similarly, though less directly, public education constitutes a large component of public spending. To the extent that those who are more highly educated have come through this system, appreciate its value and expect their children also to benefit, more education should lead to support for taxation. This effect should also hold for current students. This is a contrast to the expected effect of education on progressivity preferences, as it is likely to reduce risk and increase lifetime income (Rueda and Idema 2012). The elderly (who benefit from health and pensions spending) should also be more supportive of high tax levels. Beneficiaries of public health systems may prefer relatively high taxes, but there is no way to operationalize this empirically.

To summarize: there are good reasons that people may have different attitudes towards high tax levels and progressive tax structures. I expect support for progressivity to be higher among groups found to favor redistribution: those with lower income, lower education groups; greater economic risk. I expect greater support for high levels of taxation among middle income groups, students and the more highly educated, older people and public employees. Political and social trust should increase support for high levels of taxation, but their effects on progressivity preferences are unclear.

3.2.1 Rationality and the link between taxes and spending

The arguments made here about attitudes towards overall tax levels are based on the economic reality that taxes pay for spending. This logic requires that citizens be aware of the links between tax revenues and spending levels. Otherwise, anticipation of gaining from spending policies would have no effect on support for overall tax levels.

The notion that citizens' tax attitudes are potentially inconsistent with preferences over spending has a long pedigree. Concern that the value of public goods would be underestimated relative to their tax costs led to fears that `submerged' states would be too small (Downs 1960); and a lack of support for spending cuts to match calls for tax reductions is construed as a failure to link revenues to outlays. However, `something for nothing' preferences are equally consistent with a desire to free-ride. Recent empirical investigation reveals that in Sweden the free-riding motive is a better characterization of this type of `inconsistent' tax and spend preferences than a pure irrationality description (Edlund and Sevä, 2012).

Regardless of the accurate theoretical characterization of delinking, the ISSP allows us to investigate its importance. Considering whether tax and spending levels are linked in the minds of respondents in a context different from my main tax attitude data provides a somewhat independent examination of this underlying assumption.

The survey asks respondents whether they believe that it is the responsibility of government to do various things (see Supplementary Material for text of questions used). These questions make no reference to the tax cost of government activity. A second set of questions asks about spending on some of these same activities, and explicitly reminds respondents that increases in spending may entail increases in taxation. If respondents do not typically link government activity to its tax costs, we should see large changes in support for intervention when the costs are explicitly brought to their attention.

These questions are not ideal for gauging delinking, as they differ in other ways. The unpriced questions ask whether the government is `responsible' for a particular action (for example, providing a decent standard of living for the elderly), but this responsibility might be met without changing spending. Respondents could think that government provision for the elderly need expansion by reforms other than spending increases, or that current outlays discharge the responsibility. Thus declines in support when the tax price of spending is highlighted are upper bounds for the extent of delinking.

[Table 1 about here
Table 1: Delinking of tax and spending preferences. Numbers in parentheses classify `stay the same' spending responses with increases. Source: Authors' calculations based on ISSP 2006.]

Table 1 gives the share of respondents who give positive responses to questions of government responsibility for three policy areas: providing a decent standard of living to the elderly; to the unemployed; and providing healthcare. The second row indicates the share preferring higher spending, while the third row shows supporters of higher spending among advocates of government responsibility. As delinking would imply, support for tax-financed spending increases is lower than for government responsibility. However, particularly for health and the elderly, the decline is surprisingly small. If support for status quo spending can be taken as support for government responsibility, there is no penalty associated with highlighting tax costs. For unemployment benefits there is more resistance to spending increases, but the menu of alternative policies to `provide a decent of standard of living' (such as the provision of training or employment) is expansive relative to the spending question (which refers to spending on benefits). Even here, 83 percent of those endorsing government responsibility maintain their support for current (or greater) spending when the tax cost is made explicit.

Overall, then, there is little evidence that respondents in the ISSP suffer from significant inability to link the level of spending to levels of taxation. This provides some independent support for the assumption that, should we observe the expected pattern in tax attitudes that benefitting from spending programs would predict, citizens' understanding of the relationship between tax and spending levels is a plausible explanation.

4. Empirical analyses

I study tax attitudes as redistributive policy, and to the exclusion of spending preferences for two reasons. First, a focus on taxation allows for a clear separation of levels and structures as redistributive tools, as groups of taxpayers are better grouped by income than are benefit recipients. Second, even at a descriptive level, much less attention has been paid to the contours of redistributive tax attitudes. Outlining the shape of these attitudes across individuals and across countries provides new empirical detail.

The 2006 Role of Government survey asks questions on attitudes in 33 countries. However, to maintain comparability, I limit the analysis to the advanced industrial countries within the dataset. This yields 24555 respondents in 17 countries.[iii] I impute missing data using the Amelia program in R (Honaker *et al.* 2012, King et al. 2001).

4.1 Measuring tax attitudes

The rich information on tax attitudes recommends the ISSP for my purposes. I use three questions about taxes to create an innovative measure of progressivity preferences. Respondents assess taxes on high, middle, and low income groups[iv]. I combine `much too high' and `too high' assessments (similarly for 'too low') to reduce the error that might be induced by respondents having different understandings of how much constitutes `much' too high (Rehm 2011). This also reduces the number of potential combinations and makes it easier to identify progressive responses.

I code preferences as progressive if the respondent's assessment of taxes paid (relative to ideal) decreases with income. This yields a binary measure, with values of 1 indicating respondents who think the rich are taxed too lightly.[v] To measure attitudes towards tax levels I take the average tax attitude across all the income groups. The `much too high' response is coded 1, and `much too low', 5; so increases in the average tax variable indicate greater support for higher taxation.

The measure of progressive tax attitudes used here has two major advantages over a simpler measure: respondents' attitudes towards taxes on the rich. First, indicating that taxes on lower income groups are much too high, while those on the rich are about right, implies a preference for progressively structured cuts which would be missed by the simple measure. Second, attitudes towards taxes on the rich are constitutive of the overall attitudes towards tax levels, so there is a logical dependence between attitudes to taxes on high incomes and overall tax-level attitudes which is avoided in my preferred measure.

[[FIGURE 1 ABOUT HERE

Figure 1. Attitudes towards taxation in 17 countries. Evaluations of taxes on the three groups are given as: high incomes, middle incomes, low incomes. L = too low; R = about right; H = too high. Source: Authors' calculations based on ISSP (2006).]]

The distribution of respondents across the 27 possible tax-triples, and their categorization into progressive versus non-progressive structures are shown in Figure 1. The modal response is that taxes on the rich are too

low, while those on middle and low income groups are too high. Combined with the other progressive triples, 59.7 per cent of respondents indicate preferences for greater progressivity. However, there is also generalized support for tax reductions. Within the progressive category, the modal response, that the rich are taxed too lightly but others too much, calls for cuts overall. Similarly, the most common non-progressive response, and the second most common overall, is that taxes on all groups are too high. 66.4 percent of respondents have replies support more cuts than increases.

4.2 Model Specifications

I take two specific questions to the data in this form, pooled across countries.[vi] First, to what extent are the redistributive levers of tax policy separable in the public mind? Second, what are the determinants of these two types of tax attitudes? Individual characteristics should have different effects on attitudes towards tax levels and progressivity.

To assess the difference between pro-progressive attitudes and support for high taxes, we can rely on simple correlations between the two variables. I am not making any causal claims here, but am interested in how these attitudes fit together. In the determinants of tax attitudes, the socio-economic variables of interest are causally prior to the tax attitude outcomes. Though this claim is more plausible for some sociodemographic characteristics than others (public sector employment may be problematic (Alt and Turner 1982)), I follow the political economy assumption that preferences reflect position in the economy, not the other way around.

I estimate the main results using both fixed effects and random effects specifications to account for national heterogeneity. In particular, shared national-level reactions to existing policy should be captured by the country effects, mitigating criticism that the preferences measure dissatisfaction with the status quo. In principle, the fixed effects models are less prone to bias, as the random effects models assume independence between the country effect and the other predictors. In practice, given the number of countries, and the considerable variation and large number of observations within countries, the choice should make little difference (Clark and Linzer 2012).

Since the outcome variables of interest differ in their type, I use different specifications across outcomes. I model overall average tax morale as continuous, but use binomial logit models for progressive preferences. Alternative choices do not change the substance of the results (see Supplementary Material). The independent variables of interest are measured as follows, mimicking Rehm (2011).

Income in the ISSP is problematic, as its measurement is not exactly comparable across countries, but it is too important to omit without causing bias. However, the important aspect of income for redistribution is relative position, rather than the dollar amounts earned. Since redistribution is national, the important information is within-country position. Thus I create seven groups of approximately equal size within countries using the family income measure in the ISSP (Kenworthy and Pontusson, 2005). To capture the possibility of an inverse U shape, I also include the squared value of income[vii].

Public sector employment is measured by a dummy variable (with quasi-public employment coded as public). I measure education by highest degree attained. Including different degrees as five categories, the effect of each `level' has a roughly similar effect, so I treat the five categories as continuous. I include age measured in years, and a dummy variable for female. I differentiate students, the retired, and those not in the labor force using indicator variables.

The three measures of labor market risk follow Cusack *et al.* (2005). I measure skill specificity as in Iversen and Soskice (2001), capturing the risk of specific investment obsolescence. Unemployment risks are captured by the occupational unemployment rate (Rehm 2009, 2011) and an indicator for realized unemployment. Religion is measured by a continuous variable measuring the frequency of attendance. I measure political trust using a question asking whether politicians try to keep their promises. Using an alternative question about the trustworthiness of civil servants yields similar but weaker results. Social trust is gauged by the respondents' fear that other people tend to take advantage.[viii]

My primary concern is with the impact of economic self-interest on tax attitudes along the two tax policy issues. As such, I prefer not to include survey responses to attitudinal items other than social and political trust, nor partisanship, as explanatory variables. This is to avoid the reverse causation that is likely if tax attitudes influence other preferences, or party choice; and to avoid post-treatment bias given that the characteristics examined here will also affect these ideological variables. However, including left-right ideology does not alter any of the substantive conclusions drawn here.[ix] Similarly, in the analysis of the socio-economic characteristics, I prefer the specifications that do not include attitudes towards levels in the explaining preferences over progressivity, and vice versa.

5. Results: Two dimensions of tax policy preferences

I expect preferences over overall tax levels and opinions towards tax structure to differ, in contrast to the association implied by taking them together to focus on redistribution. Indeed I find that while those who express preferences for progressivity are typically more tax-acceptant, the effect is weak enough that we can learn a good deal from investigating the preferences of the `outlying' cases.

We can consider the relationship between the two variables by comparing mean values of high tax support among those with progressive and non-progressive attitudes. This yields statistically significant differences in average preferences (those with progressive preferences have tax-level preferences 0.4 points higher), driven by the large number of individuals who claim that taxes across all groups are too high. If we exclude this group, and symmetrically exclude the group assessing all groups' taxes as too low, the relationship disappears.

More importantly, the effects are weak. Among all respondents progressive tax preferences explain less than ten percent of the variation in preferences over levels. More intuitively, I divide respondents into two groups according to their tax level preferences (at its median value[x]), and cross-tabulate this variable with progressive

preferences in Table 2. Redistribution will be increased by both progressivity and higher taxes-- opposing `not progressive-too high' respondents to the `progressive-too low' group. Yet these categories contain under half of the survey respondents (48.3%). The largest share espouses both progressive preferences and a desire for lower overall taxation (38.9%), while thirteen percent of respondents think that taxes are low, but too pro-poor.

[Insert table 2 here

Table 2. Two Dimensions of Tax Attitudes: Preferences over Tax Levels and Progressivity. Source: Authors' calculations based on ISSP (2006).]

The table reinforces that the slight difference in preferences over levels between those with progressive preferences and those without (a 32:68 too low: too high split, as opposed to 35:65) is swamped by the importance of respondents who fall into categories that simple redistributive accounts neglect entirely. Self-interest is at play along both dimensions, but the implications of individual characteristics on gains from each type of tax policy diverge.

Moreover, the implications for redistributive policy point in opposite directions, depending on whether we focus on tax levels or tax structures. A clear majority favors greater progressivity (59 percent of respondents)-- that is, more redistribution. At the same time, nearly two thirds of respondents see tax levels overall as too high. Public opinion constrains different redistributive tools differently.

These results are further confirmed in more sophisticated models which account for individual level heterogeneity and country effects. Even-numbered models in Table 3 include individuals' attitudes on levels (progressivity) in models of preferences over progressivity (levels). I find a statistically significant association, but a good deal of variation still to be explained. For the models of progressivity preferences, the area under the ROC curve improves by six percentage points, while the R^2 for the linear model goes up by 0.09[xi]. In the literature on redistributive attitudes, low overall R^2 in explaining preferences by observable exogenous characteristics is typical; it is more surprising that even given information on attitudes towards progressivity, we can only explain sixteen percent of the variance in preferences over levels. Understanding the determinants of preferences along the two dimensions helps understand why attitudes towards these two aspects of redistributive taxation diverge.

5.2 Determinants of preferences

Models 1 to 4 in Table 3 show how characteristics shape attitudes towards tax levels. Models 1 and 3, and 2 and 4, are analogous specifications using fixed and random effects for country, respectively. The indistinguishability of the estimates from the fixed and random effects specification confirm the methodological expectations. The reported coefficients for the quadratic income term and for age give the impact of ten units for easier presentation.

Support for high tax levels is expected to correspond to benefitting from spending. The middle class, public sector employees, the older and better educated should be more willing to support larger government on these grounds. This has little to do with redistribution as typically conceived of as a transfer of resources from rich to poor; nor does it have a strong insurance component. Thus the effects of variables associated with redistribution preferences-- low skill and low income, as well as high risk exposure-- are not expected to increase support.

[Insert table 3 here

Table 3. The Determinants of Individual Tax Policy Preferences.

Source: Authors' calculations based on ISSP (2006). Standard errors in parentheses. p-values: *** < 0.01; ** < 0.05, * < 0.1.]

The results across the models indicate that there are significant non-linear effects of income on tax attitudes. The marginal effects of income on level preferences, in predicted probability terms, are shown in Figure 2. This displays predicted support for high tax levels by income group. Both high and low income groups have similar, low support for high tax levels. Middle income groups are the most sanguine about a heavy overall tax burden, in line with my expectations but in contrast to the expectations that would emerge from redistribution-focused accounts, where support should decline monotonically with income.

[Insert figure 2 here

Figure 2. The Effect of Income on Attitudes Towards Tax Levels.]

For education, the benefits-received account is in direct opposition to the expectations of redistribution-oriented accounts, as demands for redistribution should decrease with the greater opportunities and stability associated with higher education levels. In fact, higher education, including current status as a student, is consistently associated with greater support for higher tax levels. My account gets further support from the effects of public sector employment, which is positively signed and statistically significant. Beneficiaries of tax-financed spending acquiesce to higher tax levels to the tune of .03 points for each extra degree qualification; by 0.05 if they work in the public sector, or 0.12 for current students. The smallest of these effects is comparable to the largest estimated effects of changing income by one septile (from the first to second septile the relevant change is .03 points; from sixth to highest, -0.05). Older respondents, too, are consistently supportive of higher levels of taxation.

An insurance logic for high taxes receives little support. Unemployment and skill specificity both have estimated effects that are close to zero in absolute magnitude, as well as not reaching conventional significance levels. Those with high occupational risk levels are (imprecisely) estimated to be less accepting of high taxes. Nor does the private insurance provided by religion reduce preferred tax levels.

The trust variables also generally perform as expected. In contrast to an interpretation emphasizing confidence in government, however, social trust appears to be substantively more important in determining preferences

over tax levels than does political trust. This is consistent with the desire of respondents not to be a `sucker' paying taxes while others free ride. Nevertheless, support for high taxes among those who do not credit MPs with trying to keep their promises is around 0.05 points lower than those who strongly agree with the statement.

Thus the theoretical expectations about tax levels are supported in the data. In particular, while preferences over the level of taxation accord with self-interest, as in the case of public sector workers' preferences, they correspond poorly with what we know about redistribution. Despite the role played by larger government revenue in reducing inequality, only the very richest septile is more tax averse than the poorest, and the labor market risk variables reach at best borderline statistical significance. Further, income and education are implicated in views about aggregate tax levels in a very different way than redistribution preferences would allow: there is an `ends against the middle' logic in income, and the highly educated are more supportive of higher tax levels.

5.2.2 Preferences over Progressivity

The final four columns of Table 3 address preferences over progressivity, and show a different pattern. Income has some non-linear effect but this substantively is dominated by the decline of support for progressivity at high income levels (see Figure 3). Between the first and third income septile there is an increase in the probability of giving a progressive response profile of around five percentage points. The corresponding decline moving up from the fifth to the top income septile is a 28 point change. High incomes massively decrease the chance of supporting progressive tax structures, confirming our clearest theoretical expectation.

[Insert figure 3 here

Figure 3. The Effect of Income on Preferences over Tax Progressivity.]

Higher education levels are associated with less support for progressive taxation. Although in Model 5 the estimate does not reach conventional levels of significance, its direction is in line with its typical characterization as a proxy for lower risks (Rehm 2011), or higher permanent income (Idema and Rueda, 2012). Similarly, students' preferences over progressivity are no different from employees'. The insurance role of redistribution is reflected to some degree in the data on unemployment risks. Specifically, higher occupational unemployment rates predispose respondents to advocate progressive taxation. However, the effect of realized unemployment, while it is positive, is so imprecisely estimated that it is statistically indistinguishable from zero, and specific skills appear to have (a precisely estimated) zero effect.

Including measures of trust in the analysis of preferences over tax structure serves to test the intuition that as government is trusted less in general, it is equally trusted less to redistribute income (Alt *et al.*, 2010). In contrast to this expectation, political trust is consistently, strongly, negatively associated with progressive tax preferences. Those who do not believe politicians can be trusted are more likely to want relative increases of taxes on the rich. The coefficient of 0.1 in Model 2 translates to a shift of 10 percentage point change in the predicted probability of giving a progressive response, across the full range of political trust (with other values

held constant). Thus low trust in government cannot be characterized as reducing the demand for redistribution: low political trust diminishes the demand to see large government but increases demands for a pro-poor structure.

As with preferences over levels, attitudes towards progressivity are only marginally altered by the inclusion of views over the other dimension of tax policy in the analysis. There is one substantive change. Social trust becomes a significant predictor of attitudes towards progressivity, with lower-trust individuals more likely to advocate progressive structures. It seems low social trust leads to fears that the rich, rather than the poor, are playing others for `suckers'.

In summary: preferences over taxation are affected by individual characteristics in ways that are predictable, and suggest two types of attitude towards redistribution. Support for high taxes is greater among those who benefit from spending, but this translates to middle income groups, and the more educated (as well as public employees), not to the poor. Insurance motivations play some role determining preferences over progressivity, but not government size. Overall, preferences over the structure of taxation accord better with demands based on redistribution and insurance. Finally, political trust has opposite effects on preferences over the size and shape of government. Low trust leads to an unwillingness to accept high levels of taxation, but increases support for progressive structures.

6. Cross-national variation

I noted the importance of accounting for national variation in identifying the individual level relationships above. This variation across countries can be seen in Figures 4 and 5. For tax levels, an anti-tax tendency (values below 3) is universal, and there is not much variation across countries: the variance of the means across countries is 0.02, while mean within-country variance is 0.37. Interestingly, while New Zealand, Australia and Canada are grouped at the anti-tax pole, the United States is among the most tax-supportive countries. Southern European (France, Spain and Portugal) countries score low in terms of tax-acceptance, but the bottom half is rounded out by Sweden and Denmark. There is some variation in preferences over tax levels, but no simple patterns explicable by welfare regime typologies.

[[FIGURES 4 and 5 ABOUT HERE.

Figure 4. Assessments of tax levels across countries. Values range from 1 (much too low, for all incomes) to 5 (much too high, for all incomes).
Figure 5. Support for progressivity across countries.]]

For progressivity we see greater variation across countries. Progressivity receives only minority support in New Zealand, Australia, Canada and Denmark. Britain and France also have discernibly lower than average support for progressivity. Meanwhile, in Portugal, Germany and Switzerland, greater progressivity is supported by over 70 percent of respondents. Again, the country ranking is not immediately intuitive. Finland, Japan and Spain

have similar profiles in terms of support for progressivity, and an equally heterogeneous group fills out the middle of the pack: the United States, Ireland, Sweden, Norway and the Netherlands.

What explains variation in tax attitudes across countries? Institutionalist arguments highlight how the design of government programs may affect their popularity. It has been argued that the structure of taxation may affect the support it commands. More visible forms of taxation, usually associated with higher progressivity, have been argued to be responsible for anti-tax `backlash' (Hibbs and Madsen 1981; Prasad 2005; Wilensky 1975, 2002). Meanwhile, arguments about spending that stress how inclusivity of spending programs fosters support would point to progressivity undermining support, if they have any analogue in tax policy (Andreß and Heien 2001; Evans 1996; Svallfors 1997). More simply, levels of taxation and its progressivity may influence preferences thermostatically.

I extend the random-effects specifications from Table 3 to include national-level characteristics (the progressivity of the tax system and level of taxation). Full discussion and results are given in the Supplementary Material, but I find no evidence of any systematic effects. That is, national variation in attitudes does not seem to derive from existing policy variation. Given the emphasis on tax visibility leading to tax attitudes and thereby to support for much broader questions of welfare state provision, this null finding is somewhat surprising, and important.

6.1 Cross national variation in individual-level relationships

A second set of cross-country questions are more directly tied to my focus on individual level preferences: do individual income, risk, and trust operate in the same way on tax attitudes in all of the countries under study? Do national-level characteristics shape these relationships?

Existing evidence is mixed. Svallfors' (1997) early work indicated little difference across regime types in attitudes towards spending policies; but Linos and West (2003) found varying cleavages in redistribution preferences. Ansell and Gingrich (2013) provide the most recent evidence of a link between macro-contexts and individual level relationships in a more focused analysis considering the specific institutions that shape risk exposure. Some of the discrepancy across studies may stem from the different attitudes studied: there is more evidence of cross-national variation in policies concerning the poor and unemployed (Larsen 2008). However, despite the role of tax policy as a similarly salient policy for the poor, I find no evidence of cross-national variation in the effects of individual characteristics on tax attitudes. For reasons of space I present the full results and discussion in the Supplementary Material.

Finally, I consider whether countries vary in the degree of decoupling between preferences over tax structures and levels. There are indeed differences in the relationship between tax-level and tax-progressivity attitudes across countries. I use Model 8 as a baseline, and ask if there is national variation in this relationship by allowing the impact of tax level preferences to vary by country.

It turns out that Australia, Norway, Sweden, Portugal and Ireland have particularly large effects; Switzerland, Japan, the United States, Finland and France, small effects. The country-specific offsets in the estimates of the coefficient on tax level preferences can be seen in the Supplementary Material. The effect in Switzerland is around a 60 percent smaller than average in magnitude, and in Australia over a 55 percent larger. In substantive terms, the average probability (in the data) of a progressive tax preference among respondents with tax level attitudes of 2, on our measure (which is the 25th percentile score) is 0.45. An increase of tax level attitudes by one point (to 3, or approximately the 67th percentile score), moves this up to a 0.55 probability of pro-progressive attitudes in Switzerland, but to 0.82 in Australia[xii].

What explains these cross-national differences? Here, there is no existing work to inform our expectations, and the analyses should be taken as a preliminary exploration. I investigate whether this variation can be explained with reference to national tax system characteristics by interacting the (individual level) attitudes towards tax levels with the (national level) measure of tax size or progressivity. Results can be found in the Supplementary Material; but in brief there is evidence of an effect only for system progressivity. In countries with more progressive tax structures, the increase in the probability of progressive tax attitudes associated with greater acceptance of high tax levels is less pronounced.

[[Figure 6 about here.
Figure 6: Expected values of progressive tax attitudes as preferences over tax levels increase in high and low progressivity countries.]]

To understand the substantive size of these effects it is easiest to consider expected probabilities, holding individual level covariates at representative values. These results are displayed in Figure 6, which plots the expected value of progressive tax responses against increasing tax acceptance of high tax levels. The grey line shows the outcomes in the most progressive country in the sample. The increase in the chance of progressive attitudes is much less steep than that shown by the line in black, the least progressive tax system. The difference across these two extreme cases is sizable: in the lowest progressivity case, shifting from thinking tax levels are `too high' to `too low' increases the chance of a progressive response by over 0.5 percentage points; meanwhile the same shift in the most progressive country shifts the expected value by only 0.3 points. Note that a simple explanation of this effect whereby more progressive systems limit calls for further progressivity is undermined by the absence of any first order effect of tax system characteristics on attitudes.

Overall, then, the evidence for large and interesting variation in tax attitudes across countries is underwhelming. There are important country effects, but these do not seem to be strongly related to the characteristics of taxation, the most obvious institutional determinant. Equally, the ranking of the country effects does not provide much evidence of cultural families or welfare state typologies. Nor do I find much national variation in the relationships between individuals' characteristics and their tax attitudes. The exception here is in the link between attitudes over the level of taxation, and attitudes towards its structure, where the preliminary analysis

suggests that more progressive tax systems see more decoupling of preferences over these two redistributive policy levers.

7. Conclusion

In 17 advanced industrial countries, there is a distinction in the public mind between the level of government spending, and its structure. Despite its opposing implications for redistribution, the most common type of attitude towards tax policy is one in which a desire to see the rich pay more (relative to the poor and middle) is paired with a desire for lower tax levels. In countries with the most progressive tax systems, this decoupling of the two levers of redistribution is most pronounced. However, there is little difference across countries in the way attitudes towards tax levels or progressivity relate to individual economic characteristics.

Progressive taxes are disproportionately favored by those with low incomes, and lower trust in government. I find limited evidence of an insurance motives for progressive taxation, as those with high occupational unemployment rates are more supportive of progressivity. None of these characteristics strongly predict preferences for large government. Rather, middle income groups, the better educated and public employees are most favorably disposed, speaking of interests grounded more in the receipt of large-scale spending programs than in reducing inequality.

These findings have important theoretical and practical significance. For academic political economy, it is important to recognize the difference between the size and the shape of taxation. Where high levels, rather than progressive structures, have driven recent redistributive outcomes (Kato 2004; Ganghof 2006; Beramendi and Rueda 2006), in the current context of austerity, progressivity as an alternative lever for redistribution may provide some optimism for those seeking greater equality.

More practically, the distinction is important as majorities favor more progressivity in all but three countries. In contrast, tax levels are perceived as too high by majorities everywhere. Any government seeking to increase redistribution would garner more support (or face less opposition) to using changes in the structure of taxation than increasing the size of the tax take. The weakness of this strategy suggested by the so-called `paradox of redistribution' may be limited in light of evidence that the paradox has largely disappeared in recent years (Kenworthy, 2011; Marx *et al*., 2013). Even if the economics dictate that the size of government shape distributive outcomes, the politics of redistribution may be one of policy structures.

Taken in concert, these two lessons raise broader questions of democratic responsiveness. If voters favor a high degree of redistribution via progressive tax structures, but progressive taxation is harmful to growth, and redistribution can only be achieved (as a `free lunch' (Lindert 2004)) via large but regressively financed spending, democratically elected politicians face a trade-off. Understanding how this is resolved-- not only how much governments redistribute, but how they do so-- is a research agenda clarified by making the distinction

between the size and the shape of the public budget. The analyses presented here suggests that voters already do so.

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i Interested readers can refer to the Supplementary Material for more detail.

ii Counting as targeted insurance: disability and incapacity spending, unemployment and active labor market policy, and social assistance. Data from OECD (2013).

iii Australia, Canada, Denmark, Finland, France, Germany, Ireland, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Great Britain and the United States.

iv See Supplementary Material for the full question text.

v There are 3^3= 27 potential response profiles of the type `H, H, L', for example, which indicates responding that taxes on low and middle income groups are too high, and those on high incomes too low. The following triples thus represent progressive responses: HHL, HHR, HRL, HRR, HLL, RRL, RLL.

vi National variation is addressed in detail in Section 6.

vii Models that use the seven income groups as factor levels yield substantively similar results.

viii Full question texts are in the Supplementary material.

ix See Supplementary Material, which also includes alternate model specifications and dependent variables.

x A large share of respondents (20%) are located at the median value, thus this splits the sample 40:60 rather than in half.

xi The area under the ROC is a measure of goodness of fit that summarizes the percent of responses correctly classified, as the decision rule for classifying 1s and 0s based on their fitted value goes from zero to one. That is, if fitted values above 0.5 are denoted as 1s, then even a null model will correctly classify half of the responses correctly. If fitted values must be above 0.9 to be classified as a 1, the null model will correctly predict 90 percent of the 0s, but only 10 percent of the 1s. The ROC plots the share of 0s correctly predicted against 1s correctly predicted as the cutpoint varies, thus the bowing of the curve out from the origin captures percent correctly classified across (all) the potential arbitrary cutpoints.

xii This comparison is illustrative only, as it does not take into account the fact that the baseline probabilities at the original tax preference levels are not the same in both countries thanks to the level-shift associated with each country.