Institutional Quality and Social Policy Preferences: Experimental Evidence

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Abstract

Using laboratory experiments conducted in two countries, we examine how poor institutions influence individuals support for redistribution. Contrary to conventional expectations, we argue that high-earning individuals will prefer more redistribution when they can more easily evade taxes. To test our expectations, we conducted a series of experiments from February to May 2016 simulating earned income and tax evasion. We find that high earners do indeed prefer more redistribution when they can more easily under-report their income. Our findings make an important contribution to the little studied question of how institutional quality affects social policy preferences.

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Introduction

Who supports social policy in settings with weak institutional quality? Existing work on preferences for social policy has largely focused analytical attention on the more developed countries of the OECD where governments can credibly commit to policy and state capacity is strong.[1] One consequence of this focus is that existing work has largely assumed that *de jure* social policy promises embedded in statute translate fairly closely into *de facto* benefits that individuals receive with only residual dead-weight costs, if any (Meltzer and Richard, 1981; Iversen and Soskice, 2001; Benabou and Ok, 2001; Moene and Wallerstein, 2001).

Conditions in the developing world are, however, quite different. To take one important example, in a recent comparative study of tax evasion, Schneider, et al. (2010) suggest that the country average for economic activity that is hidden from tax authorities is equal to 35.7% of GDP in the developing world versus 18.7% in the OECD. Moreover, much of this activity is hidden in ways that profoundly impact the ability of states to collect funds for social policy programs, which tend to be funded by contributions on employees' pay. In countries such as Russia, for example, collusive agreements between employers and employees in which the former evade social taxes in exchange for providing wage premiums or benefits to the later are widespread (EBRD, 2007; Yakovlev, 2001). Under such circumstances, state coffers become a leaky bucket that deny individuals the *de facto* benefits that they would expect given *de jure* policy promises. Consequently, for all we know about micro-level preferences, it is unclear if theory and evidence from the well-developed, wealthy countries of the OECD can explain support for social policy where institutions are weak and governments poorly constrained (Mares, 2005a; Mares and Carnes, 2009).

In this paper, we apply hypotheses derived from two different schools of thought on the

[1]For a summary of findings on individual preferences, *c.f.* Alesina and Giuliano (2011). For important theoretical contributions tying these to macro-level variation in the welfare state, *c.f.* Estevez-Abe, Iversen, and Soskice (2001); Iversen and Soskice (2001). For broader discussions of the origins and trajectory of welfare states, *c.f.* Esping-Anderson (1990); Huber and Stephens (2001) and contributions in Pierson (2001); Hall and Soskice (2001).

influence of institutional quality on economic behavior to the question of who supports social policy where tax evasion is rampant. On the one hand, the literature on institutional quality and investment suggests that for most actors poor institutions increase transaction costs, whether due to expropriation risk or opportunistic policy reversals (Kydland and Prescott, 1977; North and Weingast, 1989; North, 1990). On the other hand, some actors may be able to take advantage of weak institutions in order to secure privileged access to property rights, favorable policies, or other favors (Faccio, 2006; Haber, 2007; Gehlbach and Keefer, 2011). In this perspective, who can take advantage of poor institutions depends on how weak institutions constrain actors and the specific strategies that they enable. Weak accountability, for example, allows the politically connected to profit by using their connections in order to gain privileged access to public goods, credit, and property rights protection (Faccio, Masulis, and McConnell, 2006; Juurikkala and Lazareva , 2006; Gehlbach and Keefer, 2011, 2012; Frye and Iwasaki, 2011). Weak state capacity, conversely, enables those with mobile assets and low visibility to the state to free-ride on others' contributions to public goods (Gehlbach, 2008; Easter, 2002).

Thus far, work on support for social policy has primarily focused on the former perspective: poor institutions impose additional dead-weight costs on social policy. Because these costs decrease the overall amount available for distribution to beneficiaries, weak institutions should lower support for social policy (Mares, 2005a). More recent work suggests, however, that poor institutions can generate support for social policy in surprising quarters as certain sectors of the populace abuse weak institutions to shift costs onto others and free-ride (Marques, 2016). In this paper, we begin by sketching a simple model of individual level support for social policy in order to motivate both sets of hypotheses and generate precise predictions.

Recent work has used experimental data to better explain social policy preferences and specifically to evaluate whether voters distinguish between the redistributive and insurance elements of social policies (Barber et al., 2013). Building on this recent experimental work on

social policy preferences, we test our predictions using a unique laboratory experiment conducted with subjects in two countries: the United States and the Russian Federation. Our experiment simulates a work environment in which participants perform a task for wages, pay taxes, and receive redistributive transfers while under a uniform threat of unemployment. Subjects vote on their preferred tax rates–meaning their preferred rate of redistribution–during each period. To operationalize our hypotheses, we introduce two treatment conditions to the baseline game. In the first, we enable subjects to hide some portion of their wages, subject to a uniform audit risk and, if audited and caught, a substantial penalty. This condition simulates traditional models of micro-level social policy preferences in which institutional quality can be modeled as a uniform dead-weight cost. The second treatment explores how variation in the ability to take advantage of weak institutional settings shapes support for social policy. As in the previous treatment, subjects are allowed to hide a portion of their income and are subjected to audits and, if caught, penalties. In this treatment condition, however, audit rates are not uniform and some subjects are much more likely to be caught than others.

Our work provides several contributions. First, theoretically, it joins a small body of work that draws attention to the importance of institutional quality for micro-level preferences for social policy (Mares, 2005a; Berens, 2012; Ansell and Samuels, 2014; Marques, 2016). Given the importance of institutional quality in the general literature on economic behavior, the relative dearth of such studies is particularly surprising. In joining this work, we also help to shed light on the determinants of social policy preferences in the developing world: a topic subsumed in the mainstream literature on social policy settings (Mares and Carnes, 2009). Second, it addresses an interesting empirical irregularity from the standpoint of existing theories of social policy preferences. Despite widespread tax evasion and free-riding on social policy in the developing world, social policy programs remain wildly popular. For example, recent data from the 2004-2008 World Values Survey indicate that in developing countries 42.9% of respondents agree with the statement that "the government should take

more responsibility to ensure that everyone is provided for" as compared to 31% in European or Anglo-saxon countries.[2] Much of the popular support for social policies may come from a narrow tax base; many may benefit from a social policy while passing the costs onto a small number of firms and individuals unable to evade paying taxes (Gehlbach, 2008). Finally, our work provides the first empirical test – to our knowledge – of how tax evasion shapes preferences for social policy conducted using experimental methodology. This allows us to both evade problems with unobservable variables and measurement that plague observational studies of social policy while simultaneously allowing us greater leverage over the precise mechanisms that shape preferences.

In the next section, we lay out two models for how individuals respond to systemic tax evasion and draw testable hypotheses from these models. In section 2, we provide details on the empirical strategy of the paper and layout the experiment we use to test our hypotheses. Section 3 discusses our results. In section 4, we draw conclusions and discuss our plans for extending this research.

1 Theory

To develop our model of social policy preferences under tax evasion, we begin with the standard Meltzer and Richard (1981) model which focuses attention on preferences for redistributive social policies.[3] We begin with the basic, individual level version of the model which we adapt from Alesina and Giuliano (2011). As this model and the others in this section are mainly meant to clarify our ideas, we leave solving the formal game for future iterations of this work. In the standard Meltzer and Richard (1981) model, individuals pay a percentage of their individual income, α_i, to the state in the form of a flat tax, τ. This tax

[2]Respondents were asked to rate the extent to which they agree with the statement on a 10 point scale. We take those who respond to this question with a 7 or higher as those that mostly agree. We acknowledge that this survey instrument has some flaws, but it is the only comparable survey conducted for a large number of international countries and this instrument is the only one available to study social policy preferences.

[3]This section draws heavily on the basic model articulated in (Marques, 2016).

is used to finance a lump sum transfer to all citizens, which follows the budget constraint $\sum_{i=1}^{n} \tau\alpha_i$. Each individual therefore receives a transfer equal to the average productivity, $\overline{\alpha}$ times the the tax rate, τ. These transfers are subject to wastage that depends on the level of taxation. This can be expressed as $\omega(\tau)$, which is an increasing function of τ. Based on this, the basic utility function of individuals can be written as:

$$u_i = \alpha_i(1-\tau) + \overline{\alpha}\tau - \omega(\tau) \tag{1}$$

Equation 1 simply states that an individuals' utility is equal to their consumption, which is in turn composed of three terms representing their after-tax wages, social policy benefits, and any dead-weight costs associated with social policy, respectively. The key finding of the model is that when $\omega = 0$, all individuals who earn below the average income ($\overline{\alpha}$) support redistributive social policy. This is because they take in more than they pay. Those above the average oppose redistribution, since they suffer a net loss. $\omega > 0$ offsets the degree to which those below the average income profit from social policy, however, since it acts as an additional cost. As ω increases, support for social policy declines, since it decreases the income range for which social policy benefits outweigh the total costs. This generates the prediction:

Hypothesis 1 *(Productivity): Following the standard Meltzer-Richard model, individuals with higher levels of productivity will prefer less redistribution and individuals with lower levels of productivity will prefer more.*

Implicit in the model above, and most work on social policy, is the notion that contributions today will be collected and paid out tomorrow as prescribed by law.[4] While dead-weight costs do siphon some social policy funds in ways unforeseen in statute, these

[4]Although for an important exception, *c.f.* Kato (2003), who emphasizes the extent to which the government can credibly commit to using additional revenue to expand welfare state generosity as a factor for explaining welfare state funding reforms in the OECD. Pierson (2001) also discusses expectations about the solvency of the welfare state as an important factor motivating reforms.

costs are generally treated in most models as something of an error term and not subject to serious analysis. Where the term is motivated, as in the canonical version of the model and some subsequent extensions, ω is often being regarded as a tax disincentive effect to production (Meltzer and Richard, 1981; Becker, 1983, 1985; Moene and Wallerstein, 2001; Iversen and Soskice, 2001).

Consider, however, that social policy shares some characteristics with investment: contributions made today are paid back tomorrow, subject to eligibility criteria. If this is the case, then work on the political economy of investment suggests that weak institutions may break expected links between contributions today and benefits tomorrow. In his seminal work, North (1990) argues there is a fundamental commitment problem between the Weberian state and its citizens with respect to investment. The state's monopoly on violence in its territory makes it the *de facto* final arbiter of property rights protection and contract enforcement in its domain (Weber, 1947; Tilly, 1992; North, 1981). Given this monopoly, there is little to prevent the state from revising property rights and contracts at the expense of the citizenry where it suits the state's interests. One area where this is particularly problematic is in policy enforcement. Work on bureaucracy has long highlighted a fundamental principle-agent problem at the heart of the relationship between the bureaucracy and policy enforcement. In particular, bureaucrats can take advantage of the informational advantages of their positions in order to bend policy to match their preferences, minimize their effort, or maximize rents (Weingast and Moran, 1983; McNollgast, 1987; Huber and Shipan, 2002). In the absence of strong institutional constraints, little can prevent state officials from altering *de facto* policy to minimize their effort or to generate rents (Beazer, 2012).

For the purposes of social policy, the ability of bureaucrats to avoid costly effort is particularly problematic for tax receipts. Tax collection is a costly endeavor that requires a real, credible threat of audit or punishment to insure compliance (Allingham and Sandmo, 1972; Alm, Martinez-Vazquez, and McClellan, 2014)Ėxisting work has shown that the amount of effort that government officials must put into collecting taxes varies both within and across

industries based on business structure, firm size, and the mobility of assets (Alm, 2012). Those whose business requires large stocks of fixed capital or use immobile assets, such as heavy industry, large-scale agriculture, or extractive sectors, are much easier for tax officials to monitor and tax (Easter, 2002; Haber, Maurer, and Razo, 2003; Gehlbach, 2008). Conversely, those involved in businesses with mobile assets, such as small firms, retail, and human capital intensive services, require much more costly effort to monitor (Kleven et al., 2011; Alm, 2012; Slonimczyk and Gimpelson, 2013). Faced with high auditing costs, officials are more likely to shirk on their responsibility to collect taxes from such groups, allowing them to engage in tax evasion and free-riding, and instead focus on extracting taxes from the more easily monitored (Easter, 2002). Such shirking is particularly associated with, and helps to perpetuate, weak institutions as shown in Gehlbach (2008).

Mares (2005a) applies the argument specifically to social policy, noting that as institutional quality declines low-level bureaucrats are less likely to fully collect social policy contributions. The unwillingness of the authorities to pursue tax evaders effectively turns social policy funds into a leaky bucket, where evasion siphons off *de jure* revenue and results in *de facto* shortages and lower benefits. Mares (2005a) argues that this is akin to imposing additional dead-weight costs on individuals, modeling the cost as a function of the extent of tax evasion.

Returning to equation 1, one can approximate Mares' model by defining dead-weight costs as $\omega(\tau, q)$, where q is the strength of institutions (and therefore the strength of tax enforcement) and $\frac{\partial \omega}{\partial q} < 0$. We assume that all individuals face the same, low risk of being caught for evasion and punished. As should be readily apparent, the individual's utility is decreasing in ω_i, which means that it is decreasing in τ but increasing in q. This is because individuals can expect others to respond to poor institutions by evading taxes. The better institutions, conversely, the lower dead-weight costs and the more individuals support social policy. Again, implicit in this argument is that weak institutions decrease support for *state-run* social policy, since it is the state that is weakly constrained. Privately run solutions

may still be viable, although this depends on the ability of actors to make agreements and enforce contracts outside the aegis of the state. Consequently, Mares would predict:

Hypothesis 2 *(Tax Evasion, Uniform Audit): Allowing tax evasion with a uniform risk of audit will lead to cheating and will undermine support for redistribution.*

Whereas Mares (2005a) focuses primarily on the average member of the populace, however, it is important to note that not everyone loses in settings where tax evasion is rampant. Work on tax evasion clearly highlights variation in the extent to which different groups can get away with evasion. Indeed, those who can hide a portion of their income from authorities potentially stand to gain quite a lot if social policy benefits are not tied to contributions. So long as the ability to evade taxes outweighs negative utility from the dead-weight costs of rampant evasion, tax evaders can profit from social policy. Put another way, the tax savings from evasion may counterbalance (or even outpace) the overall loss in benefits from poor institutions. To see this, imagine another extension to the basic Meltzer and Richard (1981) model that allows individuals to hide some portion of their wages and evade part of their tax bill. Utility now takes the form:

$$u_i = \alpha(1 - \eta_i t) + \overline{\alpha}\tau - \omega_i(\tau, \overline{\eta}) \tag{2}$$

where η_i captures the proportion of wages the individual reports to the tax authorities and is subject to taxation. We define it is a function of individual characteristics, x_i, and the strength of institutions, q. We assume that individuals with $x_i = 0$ do not have characteristics that allow them to evade taxes, resulting in $\eta_i = 1$, while individuals with $x_i = 1$ are able to evade taxes such that $0 < \eta_i < 1$. We further assume that for individuals with $x_i = 1$ the proportion of taxes paid is increasing in institutional quality q or $\frac{\partial \eta}{\partial q} > 0$. This is akin to assigning individuals variable audit rates. Following the spirit of Mares' model ω_i is dead-weight cost that is a function of the tax rate τ and the average level of tax evasion $\overline{\eta}$ and decreases the amount the state has to redistribute.

Intuitively, equation 2 provides several important insights. First, recall that in the standard Meltzer and Richard (1981) model, support for redistribution is declining in income, α, since higher wages imply higher taxes. The ability to hide income offsets this relationship, however, since the lower η_i the more of one's income can be hidden from the state. Consequently, one would expect support for social policy to be decreasing in η_i, *ceteris paribus*, since lower reported wages result in lower taxes. Second, conditional on the characteristics, x_i, that allow one to evade taxes, we would also expect that support for redistribution amongst tax evaders is also decreasing in institutional quality. This is because by definition $\frac{\partial \eta}{\partial q} > 0$, which implies that it is more difficult to hide taxes where institutional quality is good. Better institutions therefore decrease the effectiveness of tax evasion and decrease the benefits of free-riding. Third, the exact relationship between the proportion of taxes an individual pays, η_i, and the average proportion of taxes paid by society as a whole, $\overline{\eta}$, is also important. For free-riders to support redistribution, personal cost savings from hiding wages must out pace increases in the overall dead-weight costs of social policy brought on by tax evasion. Taken together, we would expect:

Hypothesis 3 *(Tax Evasion, Variable Audit): Allowing tax evasion with a variable risk of audit will lead individuals with a low risk of audit to support more redistribution and individuals with a high risk of audit to support less redistribution.*

It is also worth noting that the model above potentially suggests and interactive effect for income and the ability to evade taxes. Intuitively, individuals who are highly productive have the most to gain from tax evasion, so long as they are able to get away with it. Doing so, however, also allows them to pay taxes as if they were receiving much less income. Moreover, their larger incomes imply a larger spread between what they should pay and receive *de jure* and what actually happens *de facto* compared to other tax evaders. As a consequence, such individuals disproportionately benefit from the ability to evade taxes and free-ride on redistribution, even more so than similar individuals who can evade taxes but who make much less. Put another way, we expect such individuals to benefit from evasion directly

(by hiding income) and indirectly (by receiving more from redistribution than their income would normally warrant). This leads to the prediction:

Hypothesis 4 *(Productivity x Risk of Audit): Individuals who are highly productive and have a low risk of audit should prefer more redistribution than they otherwise would.*

Our question about how institutions shape preferences is well-suited to experimental research which is becoming increasingly common in political science research (Druckman et al., 2006, 2011; Druckman and Lupia, 2012). Experimental work in political science has provided valuable insight into a wide array of important questions(Lupia and McCubbins, 1998; Ahn, Huckfeldt, and Ryan, 2014; Druckman and Green, 2013; Gerber, Green, and Carnegie, 203; de Rooij, Green, and Gerber, 2009).

Recent experimental work has also begun to address social policy preferences (Barber et al., 2013) although there is much less experimental work in this area. Regarding the welfare state, recent experimental work has suggested several important findings, but none that address institutional quality and its impact on support for social policies. Sven Steinmo is currently conducting experimental research across 6 countries to examine when and why rates of cheating on taxes are higher or lower (Steinmo et al., ND). Recent experimental data shows that citizens behave more in response to redistributive than insurance concerns (Barber et al., 2013). Recent experimental work has also confirmed the basic finding of the Meltzer-Richard model that high-earners prefer less redistribution, but has found that personal ideology might temper this effect (Esarey et al., 2012). Another recent set of experiments has considered how different institutions check corruption and ensure accountability (Serra, 2011; Drugov et al., 2014). Our work builds on these experiments by considering how institutional quality influences social policy preferences, a critical relationship which we argue has been signicantly overlooked.

2 Experimental Design

We conduct an experiment in the USA and Russia to see how tax evasion influences individual preferences for redistribution. Screenshots of the experiment and the post-experiment survey have been appended to this paper. We use the freely available zTree software which allows us to design a group-based experiment. We have 3 versions of the experiment: 1) good institutions in which no tax evasion is allowed, 2) tax evasion with uniform audit risk in which all participants have a 10% risk of audit, and 3) tax evasion with variable audit risk in which participants are truthfully told that they have an equal chance of having either a 10% of 70% risk of audit throughout the game.. We registered the experimental design with Evidence in Government and Politics (egap).[5]

The American participants earn an average of $15 and Russian participants earned an average of 500 rubles (the equivalent of about $8-10). These are the standard compensation rates for experiments like this in each country.

Figure 1 describes the basic structure of the experiment and what happens in each round of the game.

[Figure 1 about here.]

Participants are first asked to answer a short gambling question designed to assess risk acceptance. The person leading the experimental session then reads aloud instructions about the game; written instructions appear on the computer screen at the same instructions are read aloud. Next participants are asked to complete a practice clerical task.

As depicted here, each experiment includes 3 rounds. Each round of the experiment entails the following:

[5]The design was registered on February 26, 2016 as "registration prior to realization of outcomes". Our first session was on February 3, 2016. The registration ID is 20160225AA and the registration information is available at http://egap.org/registration/1752.

1. ***Vote on Preferred Tax Rate***: Average of all preferred tax rates and same tax rate applied for whole round.

2. ***First Clerical Task***: After the first clerical task, participants receive information about their performance and the groups average performance, and a reminder about what the tax rate is for this round.

3. ***Second Clerical Task***: After the second clerical task, participants receive information about their performance and the groups average performance, and a reminder about what the tax rate is for this round.

4. ***Third Clerical Task***: For the uniform and variable audit versions of the experiment, after the third clerical task, participants are asked to self-report their wages from the previous 3 tasks, they then find out whether they were audited, and–when relevant (meaning they under-reported income and were audited)–the size of their fine. In the good institutions of the game, individuals do not report their own income (i.e., under-reporting is not an option). In all versions of the game, after the third clerical task participants receive information about their performance and the groups average performance, a reminder about what the tax rate was for this round, and the total amount of their earning for this round.

The clerical task consists of copying rows of numbers. The numbers are simply randomly generated strings of numbers and do not correspond to any real information. The task simulates real clerical work in that it is boring and there is variation in how well participants can perform the task and, therefore, how much money they can earn. Some participants, for instance, used short-cuts like the tab key and some typed more quickly. Copying numbers has the advantage of allowing us to use identical tasks in countries with different languages. A survey was conducted after the experiment. The questions included basic socioeconomic indicators, preferences about the role of the government and government spending, and trust in other. Participants were paid at the end of the experiment and were asked to come up one-by-one so that no one else knew how much money they were receiving.

The post-experiment survey also included questions about the clarity of the instructions and an open-ended question asking participants to explain their strategy. Participants generally thought the instructions for the game were clear with the modal response being that the instructions were "very clear". Comments indicated that participants were playing the game according to their own strategic interests and in a way that was consistent with the

classic Meltzer-Richard model. For instance, below is a sample of the responses we got from pre-tests of the good institutions version of the experiment in November and December 2015 in the US and Russia:

1. "When I realized that I was higher than the average I started putting my tax rate as lower to hopefully try and keep more"
2. "I was unemployed multiple times, so I raised the tax rate the third round so that I would benefit."
3. "I started at a reasonable % and then once I saw that the credits to be divided up from the pot weren't worth it (I was making far more on my own and the credits from the pot was maybe 1), then I went ahead and decreased my vote for the tax % "
4. "I played the game the way I did because I was unemployed for a lot of the rounds so after that round I increased my vote for the tax rate so that I could earn more money. I decreased it if I was playing better than the others in the round."
5. "I voted for a 0% tax rate in all three rounds because I was earning more than average in every round so I wanted as little of it to be taken as possible."
6. "The strategy was simple–to maximize one's own income after tax. To achieve this you could either decrease the tax rate or improve your performance or both simultaneously. Since changing your performance was difficult, the best way was to reduce the tax rate."
7. "I chose a strategy from the beginning and did not change it. I considered that being in the unemployed category was purely coincidental so the tax rate should be the maximum especially snce there is not a big difference between working for a couple of minutes and sitting there for a couple minutes with nothing to do."
8. "I tried to make the tax rate lower because my earned income was above average and I did not want to share it."

As a result of these preliminary trials, we were reassured that the experiment was working as intended and was testing what we thought it was. Table 1 summarizes the number of sessions and participants including the number of "high earners".

[Table 1 about here.]

Participants received 1 experimental currency unit (ECU) for each line of numbers correctly copied. We consider a high earner to be anyone making above the mean in the first

2 sets of clerical tasks. As Table 1 reveals, this means about half of the participants are classified as high earners.

Experimental sessions in the USA were conducted at the University of Colorado, Boulder at the Institute for Behavioral Science in February and March of 2016. All of the sessions were conducted by Sarah Wilson Sokhey and Joseph B. Schaffer.[6] Altogether we held 7 experimental sessions–2 good institution sessions (24 participants), 3 uniform audit sessions (34 participants), and 3 variable audit sessions (36 participants)–with a total of 94 participants. [7] Payments ranged from $11 to $21 with an average payment of $15.[8]

Experimental sessions in Russia were conducted at the Higher School of Economics in Moscow. All of the sessions were conducted by Israel Marques and a research assistant who was a native Russian speaker who read the instructions in Russian.[9] There were 11 sessions–2 good institution session (18 participants), 4 uniform audit sessions (27 participants), and 5 variable audit sessions (57 participants) for a total of 102 participants. The average payment was 500 rubles with payments ranging from 300 to 850 rubles.

The good institutions version of the experiment is useful in two regards. First, it allows us to confirm whether higher earners are behaving as we would conventionally expect according to the Meltzer-Richard model. Second, including a good institutions version allows us to compare whether these high earners behave the same way across different versions of the experiment. The uniform audit version allows us to see how all participants behave when we simulate a real-world situation where there is the ability for everyone to under-report,

[6]Pavel Bacovsky provided assistance with several sessions for which we are very grateful.

[7]For 7 participants, we were unable to link their experimental data with the post-experiment survey and they are therefore not included in some of the regression analysis below. In a few cases, it appears that the participant may not have completed the survey after the experiment. In other cases, participants mis-entered their ID number and we were unable to link them with the experimental data.

[8]We rounded payments to the nearest dollar to avoid having to make change. We had advertised an average payment of $15 and in several cases we added the same amount of money to everyone's payment to bring up the average. Because in these cases we added the same amount to everyone's payment across the board and only did so at the end of the experiment, we do not anticipate this influencing the experimental treatment.

[9]We are grateful to Ekaterina Borisova, Natalia Gimpelson, and Anastasia Mikhaenkova for their help conducting these sessions.

but institutions are still fairly good in that everyone has the same risk of audit. Finally, the variable audit version allows us to more explicitly see how high earners behave when they have a low or high risk of audit and they are aware that of those playing the game, about half have a low or high risk of being audited if they under-report. In other words, the variable audit version allows us to simulate poor institutions.

3 Experimental Results

Table 2 gives a summary of the variables included in the analysis.

[Table 2 about here.]

Our dependent variable is an individual's preferred tax rate before the 3rd round of clerical tasks (see figure 1 and the description of the experiment on pages 12-13). We include independent variables accounting for an individual's performance in the first 2 rounds. We also include controls from the survey questions including socioeconomic factors (gender and education) and preferences for government spending.

We estimate several OLS models with robust standard errors the results of which are reported in Table 3.

[Table 3 about here.]

Table 3 reveals several interesting findings which will bear more examination as we continue to conduct more experimental sessions and analyze the results. First, the results show that high earners do tend to prefer lower tax rates thereby confirming the basic intuition of the Meltzer-Richard's model and Hypothesis 1. These models show that the high earners a tax rate that is 9-23% lower.

Second, we find support for Hypothesis 3 that the variable audit risk version of the game influences redistributive preferences as seen in Models 4 and 5. In the variable audit version

of the game, we create a poor set of institutions: some individuals are easily able to under-report their income with little risk of consequences while others are not. In these cases, individuals prefer between *less* redistribution, reporting a preferred tax rate that is 9-15% lower. To our knowledge, other research has not shown this result experimentally.[10]

Third, the results show that individuals who are high earners and have a low audit risk prefer more redistribution than they otherwise would thereby confirming Hypothesis 4. In Models 7 and 8, we see that the higher earners with a low audit risk preferred an 18-19% lower tax rate. This confirms our theoretical expectation that individuals who make more than average and can hide that income will prefer more redistribution than they otherwise would. Critically, our results do not suggest that the high earners with low audit risk prefer more redistribution than low earners. Rather, our results show that being able to evade taxes results in individuals preferring somewhat higher tax rates.

The finding that high earners who can evade taxes prefer *more* redistribution provides critical insight into how poor institutions can distort redistributive preferences. This also raises important questions–not answered here–about which high earners in the real world are evading taxes and when and why high earners think they benefit for higher taxes. For now, we leave these questions for future research. Nonetheless, this basic insight that poor institutions change redistributive preferences makes an important contribution to our understanding of the institutional foundations of redistributive preferences.

Interestingly, we do not find support for Hypothesis 2. When we introduce a uniform risk of audit, we do not see any significant affect on redistributive preferences. This suggests that it is not just the ability to cheat that suppresses support for redistribution, but rather institutions in which some people can easily cheat and others cannot that leads people to support lower tax rates.

One might wonder whether American and Russian students played the game the same

[10]Note that the variable audit version of the game does not have a statistically significant effect in Models 7 and 8. This is likely due to collinearity with the "low audit" variable. Individuals can only have received a "low audit" risk if they were playing in the variable audit version of the game.

way. Our initial research design and the corresponding pre-registration did not include any speculation about whether or why American and Russian participants might play this game differently. We do not have strong theoretical reasons to expect that participants in each country would play differently or that the treatment effect would be different, nor are those questions a central part of our research question. We chose these countries primarily because of 1) convenience (two of us are based in the US and one of us is based in Russia), and 2) in part because the idea of poor institutions creating different social policy preferences is based on the experiences of countries like Russia. One might speculate that Russians in general prefer different tax rates and note that Russians and American participants are likely to have different experiences with institutions and social policy. We are not certain, however, how these country-level differences would translate into a different treatment effect from the same game. In other words, even if Russians typically prefer higher or lower tax rates than Americans, we would expect the treatment effect of introducing poor institutions to be the same.

In exploring our data, there is some evidence that Russians do play differently. Using a binary variable capturing whether a participant is Russian and interacting this with the treatment variable is sometimes significant. Split sample analyses of Russian or American participants reveal the same direction of the effect for the treatment variable, but there is statistical significance for these variables using the American sample and often not with the Russian sample. Although this suggests that the Russian participants may play the game differently, we cannot draw any strong conclusions from this nor was our project designed to test how and whether Russians and Americans play the game differently.

Finally, we have conducted a number of additional analyses with the data in long form meaning that the unit of observation was participant-round instead of participant as in the above analyses that are reported. The results of these additional models are available upon request Using participant-round as the unit of analysis, the dependent variable is the preferred tax rate for that round. The basic finding from above holds in that the uniform

treatment has no effect while the variable treatment suppresses support for redistribution. Nonetheless, we think it is preferable to conduct the analysis with participants as the unit of analysis and with the dependent variable as the preferred tax rate before the third round of the game. Doing so accounts for the fact that participants are learning from the practice round and two initial rounds about whether they are a high earner and how much is being reported. This better captures a real world case in which individuals know if they are a low or high earner in general while forming an opinion about their preferred tax rate.

4 Conclusion

The experimental evidence presented here offers evidence that poor institutions can alter how individuals perceive the benets of redistribution. When high income individuals can more easily hide their income and benet from redistribution, then the very group we would expect to least support higher rates of taxation in fact support more redistribution. The standard assumption implicit in many models of social policies is that redistribution disadvantages high earners relative to low earners. Poor institutions, especially those related to tax collection, can change the effects of redistribution.

The obvious question is how redistribution benefits the rich in the real world. Even if wealthier citizens can evade taxes, what exactly are they getting from redistribution? The answer depends both on which kinds of wealthier individuals are most easily able to evade taxes and which programs are funded by higher taxes. Wealthier citizens may prefer more redistribution if this taxation is perceived to be used for improving a countrys general infrastructure. Or perhaps wealthier citizens benefit from universal healthcare or a strong public education system. Perhaps wealthier citizens are the owners of companies and they prefer redistribution that benefits their workers and reduces payroll expenditures as long as they do not personally bear the brunt of financing these benefits. Our experimental evidence does not speak to these critical questions, or which of these explanations might be correct

in the real world.

We are conducting survey experiments this fall in the US and Russia to complement the experimental work presented here. In this work, we pose different hypothetical situations to respondents suggesting either that under-reporting on taxes is minimal or pervasive and the inquire about their support for government spending. Additionally, we are interested in seeing the results of different versions of the experiment. For instance, would participants respond similarly to poor institutions if the problem was government graft and not under-reporting? In this case, the leaky bucket would not be caused by the poor behavior of other tax-payers but by bureaucrats and politicians siphoning off money.

The results presented here are an important contribution in their own right by conrming the internal logic of our expectations. These findings have wide-ranging implications for our understanding of social policy politics. All else equal, wealthier citizens prefer less redistribution. Poor institutions mean that all else is not equal. Indeed, poor institutions are well-known to create distortions which lead to a variety of unexpected consequences. Much research has focused on the unexpected or unintended institutional consequences of poor institutions. Our contribution is in highlighting that individuals do in fact adjust their preferences in response to institutional changes. We look forward to building on this important insight in future work.

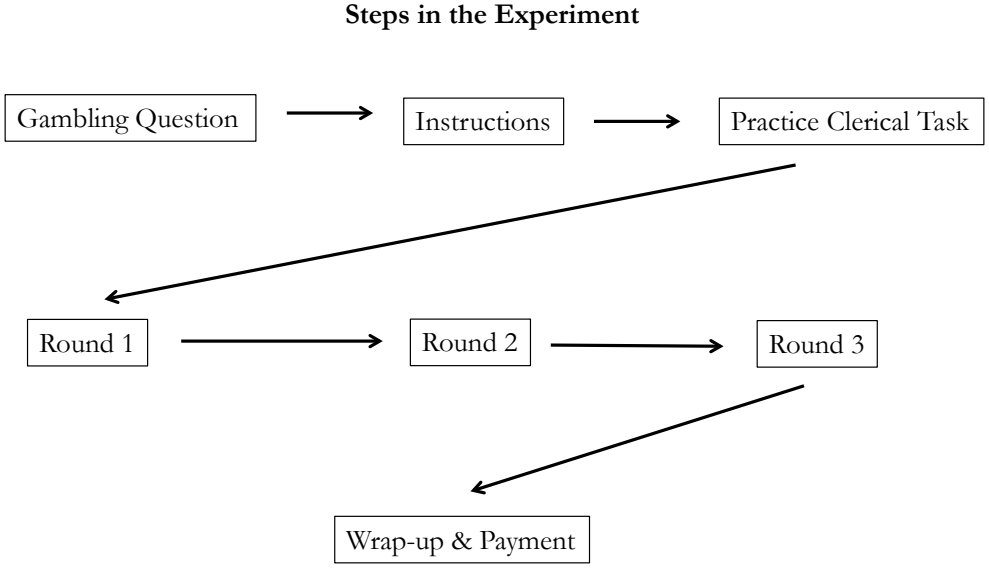

Figure 1: Flowchart of Experiment

Table 1: Summary of Participants in Experimental Sessions

	No. Participants	No. High Earners by session
American Experiments		
Good Institutions (2 sessions)	24	14
Uniform Audit (3 sessions)	34	13
Variable Audit (3 sessions)	36	16
Total US participants	94	43
Russian Experiments		
Good Institutions (2 sessions)	18	9
Uniform Audit (4 sessions)	27	13
Variable Audit (5 sessions)	57	26
Total Russia participants	102	48
Total	196	91

Table 2: Summary of Variables

Variable	Description
Redistributive Preference	DV, preferred tax rate reported before the 3rd and final set of clerical tasks
Under-reporting Income	uniform & audit versions only; report 0, 25, 50, 75, or 100% income
High Earner	earned above average for the first two sets of clerical tasks
High Earner (uniform version)	earned above average for the first two sets of clerical tasks in the uniform version
Audit Risk Low (all obs.)	1 = low risk of audit (10%), 0=high risk of audit (70%) or playing good institutions version
Audit Risk Low (audit versions)	1 = low risk of audit (10%), 0=high risk of audit (70%)
Unemployed	number of times that an individual was unemployed for the first two clerical tasks
Female	binary, 1= female
Age	in years
Audited & Fined, Set 1	for 1st set of tasks, size of fine if an individual was audited (0=not audited)
Audited & Fined, Set 2	for 2nd set of tasks, size of fine if an individual was audited (0=not audited)

Table 3: Predicting Redistributive Preferences (DV = preferred tax rate before 3rd round)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
High Earner	-23.62***	-17.24*	-18.65*	-9.16*	-17.24**	-8.51*	-15.20***	-19.58**
	(6.12)	(9.56)	(10.09)	(4.80)	(8.59)	(4.81)	(5.97)	(9.01)
Uniform Audit	-1.68	3.71	2.51					
	(6.22)	(8.79)	(9.20)					
High Earner x Uniform Audit		-10.82	-8.18					
		(12.45)	(12.98)					
Variable Audit				-9.21*	-15.29**		-9.06	-6.90
				(5.18)	(7.45)		(5.98)	(9.01)
High Earner x Variable Audit					11.73			2.24
					(10.35)			(12.61)
Low Audit Risk						-5.86	-14.66	-11.80
						(4.99)	(6.84)	(8.06)
High Earner x Low Audit Risk							18.49*	19.71*
							(9.91)	(11.97)
Constant	45.39***	41.90***	31.77	37.47***	41.90***	32.93***	36.24***	26.59*
	(5.81)	(7.07)	(26.15)	(5.02)	(6.36)	(3.81)	(4.17)	(18.15)
Controls	No	No	Yes	No	No	No	No	Yes
Observations	103	103	98	135	135	135	135	131
R-squared	0.13	0.14	0.14	0.05	0.06	0.03	0.07	0.09

Models 1 - 3: Control vs. Uniform Audit Treatment
Models 4 - 8: Control vs. Variable Audit Treatment
*** p<0.01, ** p<0.05, * p<0.1

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