

Revenue Source and Electoral Accountability: Experimental Evidence from Local US Policymakers*

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Abstract

Existing research suggests that tax-reliant governments are more accountable to citizens. This pattern is consistent with micro-level evidence that citizens who are taxed are more willing and able to make demands on leaders. However, there is no evidence on whether elected officials themselves view citizen pressures to spend tax and non-earned incomes differently. Using survey experiments conducted on elected municipal officials in the US, we find that officials report that taxes are less likely to be misused, relative to outside grants, and more likely to be spent on citizens' preferences. This is driven by the perception that electoral penalties are higher when tax funds are misused. Officials believe citizens feel stronger ownership over local tax funds and seek more information about how they are used.

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The argument that taxation leads to better governance is central to many theories of representation and democratization (Bates and Lien, 1985; Levi, 1989; North and Weingast, 1989), both for historical studies of state development (e.g. Tilly (1992)) and for research on government accountability in contemporary settings (Prichard, 2015). Consistent with this argument, existing empirical evidence suggests that governments funded primarily by taxes, rather than non-earned revenues such as oil, aid, or grants, exhibit better governance across a range of outcomes (Fisman and Gatti, 2002; Ross, 2004; Timmons, 2005; Baskaran and Bigsten, 2013; Brollo et al., 2013; Gadenne, 2016).

A critical gap in this literature is clear empirical evidence of the mechanisms that link taxation to accountability, especially those facilitated by the electoral connection between voters and policymakers. Previous work finds that citizens who pay taxes are more willing to monitor government and punish poor performance (Paler, 2013; Martin, 2016; Weigel, 2019). However, it is not obvious *a priori* that these effects are strong enough to alter policymakers' electoral incentives, or that politicians are even aware that citizen pressures may be higher under taxation. Given that citizens often have little information about funding, and that policymakers often enjoy significant leeway in their responsiveness to public opinion, perhaps taxation has a slight impact on citizens' behavior but does not change how politicians perceive the pressures they face.

This paper provides new evidence for the taxation-accountability link by demonstrating that politicians perceive greater electoral pressures when tax dollars are at stake. We develop a series of hypotheses linking revenue source to policymakers' perceptions of their electoral incentives. We then test these hypotheses through a series of surveys, including survey experiments, on a large sample of actual policymakers who allocate government expenditures: elected municipal officials from across the United States. To allow clear causal identification of revenue source's impact on perceived accountability pressures, and to be able to unpack the mechanisms behind this relationship, we focus on elected officials' *beliefs* about how revenue source affects the pressures they face from citizens; the impact of these pressures

on electoral outcomes; and the likelihood that local taxes are allocated and spent differently than outside grants.

US municipal officials are ideal subjects for our research question. Municipalities provide critical public services, accounting for 29.5% of total government spending within the US (US Census Bureau, 2015). Local budgets rely almost equally on local taxes and non-earned revenues in the form of intergovernmental grants from state and federal agencies, making multiple revenue sources highly salient (US Census Bureau, 2015).¹ Corruption in the US, while lower than many other countries, is also still relevant: between 1996 and 2015, federal prosecutors convicted about 5,000 local officials for corruption (US Department of Justice, 2016). The US context is also a hard test of the theory given the capacity of upper-level governments to monitor grant spending and since municipal grants are often derived from taxes paid to state and federal governments, implying that citizens should treat grants and local taxes equally.

We find that elected municipal officials perceive tax-funded projects as more likely to be allocated to citizens' priorities and less likely to be misused compared to projects funded by outside grants. Furthermore, officials are more likely to believe that they will face a challenger, and ultimately lose office, as a result of a scandal involving tax dollars. This effect is driven by perceptions of stronger citizen engagement: officials are more likely to believe that citizens care about how tax dollars are spent, relative to grants, and that citizens will seek information about how tax funds are spent. Finally, while grantor agencies are perceived as caring about whether funds are misused, they are also seen as having poor information about local priorities; ultimately, top-down accountability pressures appear unable to com-

¹Local taxes accounted for 36%, and intergovernmental transfers (grants) account for 32% of revenues. Fees accounted for another 24%. The National League of Cities (2016) estimates that intergovernmental transfers from states account for 20 to 25% of municipalities' revenue.

pensate for weak bottom-up accountability when spending grant funds.² Our results are remarkably stable across variation in municipal institutions and demographics and across individual characteristics, suggesting that the results capture a general, widely-applicable phenomenon.

Our experiments provide, to the best of our knowledge, the first evidence that elected officials believe that they face differential pressures for spending earned and non-earned revenues, and that top-down monitoring appears insufficient to fully compensate for these weaker bottom-up pressures. The results also support the idea of fiscal illusion (Tanzi, 1996; Oates, 1999; Rodden and Wibbels, 2002): elected officials appear to believe that funneling taxes through the federal government obscures their origin, making citizens less likely to sanction officials for misuse or policy incongruence. As many developing countries have weak top-down monitoring systems relative to the US, this paper therefore suggests one reason why decentralization appears to have more positive impacts in developed countries (Treisman, 2007). However, more work is needed to show that this is indeed the case. Finally, this paper contributes to recent work suggesting that politicians' behavior depends on their perceptions of their re-election chances (Sheffer and Loewen, 2017) and that municipal elections are affected by policy decisions (Sances, 2017).

1 Revenue Source and Accountability

An accountable government is commonly defined as one that chooses the policies and budget most preferred by citizens and then implements these policies efficiently and without patronage or corruption (Fearon, 1999). This suggests two ways in which accountability in the use of government funds can break down. First, officials can spend funds on their own preferred projects, rather than following citizens' preferences. We refer to this as *policy incongruence*. Second, once funds are allocated, officials can *misuse* them in some way. This could include

²Grantor agencies may also prioritize funding their own preferences over those of citizens.

outright embezzlement, favoring incompetent contractors, overpaying for services in return for kickbacks, or overly expanding public payrolls to hire supporters. While the welfare effects of misuse are unambiguously negative, policy incongruence could be welfare-improving (Fox, 2007) if politicians have better information or longer time horizons than citizens.

In most theories of democratic accountability, elections play a critical role in minimizing both policy incongruence and misuse by giving citizens a way to credibly punish officials for misbehavior. However, this requires that politicians perceive citizens as willing and able to use elections to demand accountability. This makes it critical to understand the factors that affect when citizens will actually use elections to hold politicians accountable, and when politicians will actually recognize these pressures and change their behavior accordingly.

The remainder of this section first outlines existing theories and evidence regarding whether, and how, revenue source might affect accountability processes. It then uses this literature to develop a set of testable hypotheses regarding how municipal officials might perceive the linkages between taxation, citizen behavior, and electoral pressures.

1.1 Theories of Revenue Source and Accountability

Previous research suggests that both policy incongruence and misuse are lowest when governments are funded by taxes. In contrast, access to substantial revenues from foreign aid or natural resources appears to result in a “resource curse” that leads to worse governance outcomes along a range of measures (see e.g., Ross, 2015). Cross-national analyses show that governments that rely more heavily on taxation and have higher tax-to-GDP ratios exhibit higher levels of democracy, lower levels of corruption, and more government policies that favor those who bear the brunt of taxation (Ross, 2004; Timmons, 2005; Baskaran and Bigsten, 2013; Prichard, 2015).

At the subnational level, there is evidence that intergovernmental grants can also act as windfalls and generate a resource-curse like effect. While such grants are typically still composed of taxes to the central government, theories of fiscal illusion argue they can “create

the appearance that local public expenditures are funded by non-residents” (Rodden and Wibbels, 2002). Government grants may therefore obscure which level of government should be held responsible for poor performance, lowering accountability (e.g., Tanzi, 1996; Oates, 1999; Rodden and Wibbels, 2002). In Brazil, increases in local taxes are more likely to be spent on public goods than increases in grants (Gadenne, 2016), and tax-reliant municipalities are less corrupt (Brollo et al., 2013). In Argentina, subnational units that rely more heavily on local revenues are more democratic (Gervasoni, 2010). Likewise, US states that rely on federal grants have higher levels of corruption convictions (Fisman and Gatti, 2002).

The existing evidence, therefore, supports the idea that governments will be more accountable for how they spend (local) tax revenues, compared to windfalls like grants, aid, or oil. However, there is ongoing debate about the exact mechanism behind this effect.

One possible explanation for this relationship between revenue source, policy congruence, and misuse is that taxation increases bottom-up accountability pressures and makes politicians more likely to face electoral sanctions for misbehavior. There are two main mechanisms behind this theory. First, taxation may make citizens more willing to take costly actions to sanction poor government performance. This could occur if taxation either makes citizens more determined to recover that lost income through public goods, or if taxation increases citizens’ sense of ownership over the budget (Sandbu, 2006; Paler, 2013; Martin, 2016; De la Cuesta et al., 2019). A second possibility is that taxation increases citizens’ information about government performance, either by signaling the size of the budget or by making citizens more willing to monitor how “their” money is spent (Besley, 2006; Paler, 2013; Gadenne, 2016). Existing evidence supports the idea that taxation increases political engagement in lab and field experiments (Martin, 2016; De la Cuesta et al., 2019; Weigel, 2019), and that taxed citizens are more likely to pay for information about government performance (Paler, 2013).

These two mechanisms—increased sanctioning and monitoring for local taxes—could influence politicians’ behavior since providing citizens with information about levels of policy

incongruence and misuse affects municipal-level electoral outcomes (Ferraz and Finan, 2008, 2011; Sances, 2017). Thus, if citizens pay more attention to how taxes are spent, politicians who misuse these funds or allocate them out of line with citizens' preferences are more likely to face electoral pressure. This would incentivize local officials to be more sensitive to citizens' preferences with local tax revenue.

However, the evidence that taxed citizens are more likely to monitor and sanction officials is not conclusive. Existing evidence relies primarily on survey and laboratory experiments in which citizens do not have to overcome collective action problems or other real-world barriers to action.³ This raises the possibility that the effect of taxation on citizen behavior is too small to induce collective action and affect politicians' electoral incentives. It is also possible that elected officials are unaware that citizen pressures differ by revenue type. In either case, other mechanisms would need to be at play to explain why governments are more accountable for how they spend locally derived tax revenue than windfalls.

There are also reasons to doubt that grants are truly comparable to aid and oil. Existing evidence that taxation affects citizen behavior comes from settings where the alternative to tax dollars is resource rents or aid. As intergovernmental grants are often derived from citizens' taxes to higher-level government units, perhaps citizens are equally like to monitor and sanction local officials for both local and external funding. Another possibility is that citizens do demand more accountability for local taxes, but that in high-capacity states like the US, these pressures are offset by top-down monitoring of grants. If granting agencies can credibly threaten to withhold future funding, this could compensate for weaker citizen pressures, resulting in tax and grants funds being used equally well.

This lack of evidence on the electoral connection is especially important as an alternate mechanism—tax bargaining—can explain the correlations between taxation, representation,

³The exception, Weigel (2019), finds that tax collection increases political action even among non-taxpayers, questioning whether the act of paying taxes accounts for increased engagement.

and accountability. Theories of tax bargaining posit that when citizens have the ability to withhold tax revenues, government leaders may be forced to grant citizens representation, or to improve accountability by lowering policy incongruence and misuse, in order to induce citizens to pay their taxes voluntarily (Bates and Lien, 1985; Levi, 1989; North and Weingast, 1989). In this story, politicians spend tax dollars differently because they want to obtain quasi-voluntary tax compliance, not because citizens care more about tax dollars or because officials fear electoral sanctions. Thus, while tax bargaining predicts that taxation should only drive higher accountability when citizens can threaten non-compliance, the electoral connection mechanism predicts that taxes promote accountability even when non-compliance is not an option. As tax non-compliance is difficult in countries, like the US, where most income is subject to third-party reporting, we should therefore expect tax bargaining to have only small effects on accountability in the US case. Tax bargaining also does not predict that politicians will perceive higher electoral pressures for how they spend local taxes relative to windfall revenues.

1.2 Hypotheses on the Electoral Connection

To review, existing theory and evidence suggest that misuse and policy incongruence may be lower for tax funds relative to windfall revenues (including intergovernmental grants) due to taxed citizens' higher willingness to punish non-accountable politicians. However, we lack evidence that politicians actually recognize that such pressures exist, or that they are sufficiently strong to affect electoral incentives. This paper examines this "missing link" by testing a series of hypotheses (summarized in Table 1) on how revenue source would affect politicians' perceptions of voter behavior if taxation diminished misuse and policy incongruence through the electoral connection. This focus on policymakers' perceptions of voter behavior has methodological advantages (see Section 2) and follows recent work on legislative behavior (e.g., Butler and Powell, 2014; Sheffer and Loewen, 2017). It is also consistent with foundational theories of representation and legislative behavior, which hinge

on politicians' *perceptions* of the electoral consequences of their actions (e.g., Kingdon 1967; Mayhew 1974, 57; Arnold 1990, 46) regardless of their accuracy.

Our first set of hypotheses tests the general equilibrium that municipal officials should believe exists if they perceive that they face more electoral pressure on tax than grant revenue. In Table 1, we separate this “general equilibrium” prediction into two parts. Hypothesis E1 states that officials should believe *policy incongruence* should be lower for projects funded by local taxes, relative to outside grants; Hypothesis E2 states that *misuse* should also be lower. If these hypotheses do not hold, it suggests either that bottom-up pressures are not perceived as higher for tax spending, or that top-down grantor pressures are sufficient to compensate.

Our next set of hypotheses links these equilibrium effects to the bottom-up accountability pressures that municipal officials face for misuse and policy incongruence. If the electoral connection explains the patterns proposed by Hypotheses E1 and E2, then officials should believe that those who engage in misuse or policy incongruence will be more likely to face electoral sanctions—such as facing challengers or losing office—when tax dollars are involved (Hypothesis T1: Electoral). This could be driven by two possible mechanisms based on previous work. First, citizens might simply care more about how local taxes are spent, and thus are more likely to punish their misuse (e.g., Martin, 2016). Hypothesis T2 (Behavioral), therefore, predicts that politicians should believe that citizens care more about how local taxes are spent, relative to grants. Second, citizens might have better information about how tax dollars are spent (Besley, 2006; Paler, 2013; Gadenne, 2016). Hypothesis T3 (Informational) therefore predicts that officials should believe that citizens will be more likely to seek out information about misuse and policy incongruence involving tax funds. Note that this implication holds if taxation increases willingness to monitor, as found by Paler (2013), or if taxation directly increases citizen information about the government's budget.

If municipal officials are more accountable for how they spend local taxes, relative to outside grants, they must also believe that the “top-down” pressures they face from grant-

Hypotheses: Equilibrium Result

#	Label	Hypothesis: Relative to outside grants...
E1	Policy Incongruence	Officials believe that policy incongruence will be lower for projects funded by local taxes.
E2	Misuse	Officials believe that misuse of funds will be lower for projects funded by local taxes.

Hypotheses: Taxes and Bottom-up Accountability

#	Label	Hypothesis: Relative to outside grants...
T1	Electoral	Officials believe they are more likely to face electoral sanctions for misuse or policy incongruence involving taxes.
T2	Behavioral	Officials believe that citizens care more about how local taxes are spent.
T3	Informational	Officials believe that citizens are more likely to seek information regarding how local taxes are spent.

Hypotheses: Grants and Top-Down Accountability

#	Label	Hypothesis:
G1	Grantor Information	Officials believe that granting agencies will have poor information about policy incongruence involving grants.
G2	Grantor Priorities	Officials believe that granting agencies will care less about policy incongruence involving grants.
G3	Grantor Monitoring	Officials believe that granting agencies will have good information about misuse involving grants.
G4	Grantor Sanctions	Officials believe that misuse of grant funds will cause a municipality to lose future grants.

Table 1: *Hypotheses*. This table summarizes the hypotheses tested below.

ing agencies are insufficient to compensate for lower citizen pressures to spend grant funds well. This leads to our final set of hypotheses (G1–G4 in Table 1). We first consider how granting agencies may respond to policy incongruence. The decentralization literature suggests that granting agencies may lack the local information necessary to determine whether grant-funded projects accord with citizen preferences. Indeed, agencies may even explicitly fund projects that local preferences make unlikely to be funded otherwise, suggesting that they may also not care whether grants are congruent with citizens’ preferences. Thus, we expect that municipal officials will perceive granting agencies as lacking good information about citizen preferences, and therefore policy incongruence involving grants (Hypothesis G1: Grantor Information). We also expect that, even if granting agencies know citizens’ preferences, they will not be perceived as caring strongly about whether policy incongruence is occurring (Hypothesis G2: Grantor Priorities).

In contrast, we expect granting agencies to be better able to monitor misuse, and to treat it more severely. Through reporting requirements and audits, we expect municipal officials to believe that granting agencies are likely to find out about misuse (Hypothesis G3: Grantor Monitoring). If misuse occurs, granting agencies will have strong incentives to cut off future grant funding (Hypothesis G4: Grantor Sanctions). If this is true, and perceived misuse is still more common among grant-funded projects, we interpret that as meaning that the loss of future funding is not viewed as seriously by officials as potential electoral losses.

We expect our hypotheses to hold among elected municipal officials in general. However, it is possible that some types of officials will respond more strongly to revenue source than others. For example, previous work argues that female politicians are less prone to corruption (e.g., Esarey and Schwindt-Bayer, 2018), and that political institutions at the municipal level impact policy congruence (for a review, see Tausanovitch and Warshaw (2014)). We consider this possibility in Section 4, testing for heterogeneity by gender, partisanship, and other individual and municipal characteristics.

2 Measuring Policymakers' Perceptions

We test the link between revenue source and politicians' perceptions of accountability pressures using data from elected US municipal officials. As discussed in the introduction, US municipal officials are ideal subjects and provide a hard test for our theoretical predictions. To test our hypotheses, we included questions on two large, nationwide surveys of elected municipal officials in the US, the 2012 and 2014 American Municipal Official Surveys (AMOS 2012 and AMOS 2014), both of which were administered by Daniel Butler and Adam Dynes and included questions for multiple projects from a variety of scholars. Conducting two rounds of data collection allowed us to analyze our initial results and then design a new survey instrument to expand and confirm our findings. The surveys included a variety of modules for this paper, including survey experiments that provide leverage on causal inference and reduce social desirability bias by avoiding asking respondents directly whether they are less accountable to the public for grant expenditures.

Our survey approach is advantageous over observational analysis of municipal budget allocations for several reasons. First, even if sufficiently detailed municipal revenue source and expenditure data could be collected, we lack exogenous variation in reliance on taxation, making causal claims difficult. Second, identifying whether officials are more likely to fund citizens' priorities over their own would require detailed data on public opinion and public officials' preferences that are typically not available. Third, such an analysis does not allow us to test the potential mechanisms outlined in previous sections. Our measures of policymakers' perceptions overcome these barriers and have one additional advantage, namely that such perceptions are in fact the key missing link in existing evidence on taxation and accountability.

To construct the population of officials for AMOS 2012 and AMOS 2014, research assistants searched for the websites of each sub-county general purpose government identified by the US Census. If a website was found, they collected the names and email addresses of elected executives (e.g., mayors) and members of the governing legislative body (e.g., city

councilors, aldermen, supervisors, etc.). This resulted in a list of over 25,000 officials for each survey.⁴ Officials were then emailed an invitation to participate with a link to the online Qualtrics survey. Two follow-up email reminders were sent over the subsequent month. The surveys were designed to take about 12 to 15 minutes to complete and included questions and experiments for unrelated projects by other authors.

The survey response rates were 23% (2012) and 19% (2014), on par with other recent online surveys of elites (e.g., Harden, 2016). Respondents' municipalities vary widely in terms of population, location, and political institutions. Although policymakers from larger municipalities were slightly more likely to participate, this means respondents are more representative of the types of cities in which most Americans live. In addition, our sample is representative of the overall distribution of municipalities in terms of demographic features such as minority population size, median income, employment, and education. And while the full population of municipal officials is unknown, respondents to our survey are similar to non-respondents on gender, the proportion of respondents who are mayors, and the proportion of respondents in cities with city managers. Our respondents also vary significantly on a wide range of politically-relevant, individual-level variables such as ideology, partisanship, years in office, and political ambition. About 15 percent of respondents were elected chief executives (mayors); remaining respondents were elected legislators (city councilors or the equivalent). Appendix A in the online materials reports additional sampling details.

3 Results

To simplify presentation, this section describes and then presents the results from each AMOS 2012 and 2014 survey module. For all survey experiments, randomization was at the respondent level. Because different subsets of the sample received different modules,

⁴To minimize survey costs, AMOS 2014 excluded municipalities of fewer than 3,000 residents, as these were unlikely to have websites, and had low 2012 response rates.

the number of observations varies by question. Results presented in the main body of the paper are limited to respondents who indicated that they held an elected position in their municipality. Section 4 discusses potential threats to inference as well as subgroup analyses. Our results are robust to a variety of model specifications and are generally consistent when broken down by respondent and municipal characteristics. Appendix B reports the full text of each survey question.

3.1 Equilibrium Effects of Revenue Source

We begin with tests of whether officials report using tax and grant funds differently (Hypotheses E1 and E2) and then examine the mechanisms behind the results. As an initial test of Hypothesis E1, AMOS 2012 included a non-experimental question that directly measures whether municipal officials believe that policy congruence is higher for local taxes, relative to grants.⁵ The question explained to respondents that some scholars believed that local taxes were more likely to be spent on citizens' priorities than central transfers, grants, or natural resource royalties, then directly asked officials whether they agreed that "when the circumstances are exactly the same in every way except for the source of the revenue, elected officials are more likely to spend local taxes on public goods for the community and on things that their constituents want."⁶

⁵AMOS 2012 also included two vignette-style survey experiments that attempted to test how revenue source affects budget allocations. These vignettes returned null findings. However, qualitative feedback from respondents confirms that the vignettes were seen as unrealistic. For this reason, we exclude the vignettes from our main analysis. For more details, see Appendix E.

⁶To avoid influencing the other survey questions, this question was put at the end of the survey and was separated from any other questions analyzed in this paper by several survey pages of questions for other projects.

The majority of respondents (62%) agreed at least somewhat with the statement; only 28% actively disagreed.⁷ This is especially striking given that any social desirability bias should lead respondents to under-report ever deviating from citizens' wishes.⁸ Officials who responded to the survey are also likely, on average, more public-minded than those who did not, and thus less likely to agree with such a statement.

To confirm this initial finding, AMOS 2014 included a survey experiment designed to test whether officials believe that projects funded with local taxes will be less prone to policy incongruence (HE1: Policy Incongruence) and misuse (HE2: Misuse) than grant-funded projects. There were two levels of randomization in the experiment: respondents were first randomized into the type of non-accountable behavior considered (misuse or policy incongruence), and then randomized into the information they received on the revenue source. The experimental design was essentially a one-dimensional conjoint experiment in which we presented respondents with four randomly-selected pairs of municipal projects. Each project was identical except for the revenue source, which was drawn from one of four possible conditions: local taxes or one of three possible types of grants. Based on random assignment, half of respondents were asked after each pair which project they thought was more prone to misuse; the other half of respondents were asked which project they thought was more prone to policy incongruence.

The experiment considered four different possible revenue sources: local taxes, and three different types of grants. We included multiple types of grants to allow us to test whether several common and salient forms of windfalls are perceived as more or less prone to incon-

⁷We coded agreement as those who chose “somewhat agree”, “agree”, or “strongly agree”.

⁸One concern might be that officials agreed simply in deference to our “expert opinion.” In open-ended survey comments respondents were quick to point out areas where they did not agree with the phrasing or intent of other survey questions; this suggests strong willingness to disagree with the researchers, mitigating this concern.

gruence or misuse than others. As a baseline, we considered “pure grants” acquired through normal channels. Next, we included grants that require local matching funds from taxes; this tests the possibility that matching requirements alleviate accountability problems that grants face. Finally, we included pure grants that are allocated by the municipality’s state representative; this is commonly referred to as pork-barrel spending. This tests whether municipal officials believe top-down involvement by higher-level government officials affects local accountability for grants. This generated four possible revenue conditions, generating six possible pairs of projects:

- “funded entirely by local tax dollars” (Tax condition)
- “funded entirely by a grant that does not require matching funds” (Grant condition)
- “funded by a grant that includes local matching funds” (Matching Grant condition)
- “funded entirely by a grant that was secured by a state legislator whose district overlaps with yours” (Pork condition)

In the experiment, the 50% of respondents assigned to the Misuse condition were given a short prompt explaining that while most officials were honest, sometimes dishonest people misuse municipal funds. Respondents were then told that they would be shown four pairs (one at a time) of “capital improvement projects that are funded through different means,” and that they would be asked to select the project in each pair in which they believed misuse of funds was most likely to occur. We did not include additional project details, as it is difficult to find more specific types of projects that all municipalities, and local officials, will find realistic. After the prompt, one of the six possible pairs of projects was randomly selected and shown to the respondent, also randomizing which source was presented first. For example, a respondent assigned to evaluate misuse and to see a matching grant versus a tax-funded project in her first pair would see the following:

- “Project A is funded entirely by a grant that includes local matching funds.”
- “Project B is funded entirely by local tax dollars.”

Below this was a prompt asking them to “select which project is misuse of funds more likely to occur.” After selecting either A or B, the next screen of the survey would show the

respondent a second randomly-selected pair of projects. In total, each respondent was asked to evaluate four pairs.

The experiment was very similar for the 50% of respondents assigned to the Policy Incongruence condition. The key differences are that, in the prompt, respondents were told that “Municipal officials often face hard choices about how to allocate funds,” and that sometimes an official might prefer different projects than his/her constituents. They were then likewise told that they would see four pairs of projects (one at a time), and would need to indicate the project that “you would be more likely to use the money on what citizens prefer (even when you feel that another project would be better)”.

Based on Hypotheses E1 (Policy Incongruence) and E2 (Misuse), our primary expectation is that municipal officials will be considerably more likely to indicate that incongruence and misuse are higher with projects funded by pure grants than those funded by local tax dollars. As discussed above, the additional two sources were included to generate a more nuanced picture of outside funding. Grants that require matching funds from local tax revenue are common in local government, and we expect that perceived misuse and policy incongruence for matching grant spending will be in between tax and pure grant spending since these funds include a mix of both. Pork-barrel projects are also common in state politics, but our theoretical expectations for them are unclear. Though state legislators allocate grants for electoral reasons (and thus, have an incentive to secure grants that are congruent with constituents’ preferences), their district boundaries may not align with the municipalities, leading to policy incongruence with constituents in a particular municipality. Pork projects may also be perceived by municipal officials as instruments of patronage, which could lead to higher perceived incongruence and misuse. In either case, the key results for this paper are the effects of the Tax condition versus the Grant condition.

Our analysis follows the methodology for analyzing conjoint survey experiments in Hainmueller, Hopkins and Yamamoto (2012). The unit of observation is a single project within a single pair, resulting in eight observations per respondent. Figure 1 graphs the results

of a set of regressions in which the dependent variable is a dummy for whether a project was chosen as more likely to involve poor accountability, and the independent variables are dummies for how the project was funded, using the “Pure Grant” condition as the omitted baseline category. The dots in each figure represent the estimated OLS coefficients from the regressions; the bars show 95% confidence intervals. Standard errors are clustered by individual. The coefficients can be interpreted as the percentage point change in the likelihood that a project was chosen as more likely to involve policy incongruence or misuse, relative to a project funded purely by outside grants. Negative coefficients indicate that subjects believed either policy incongruence or misuse was less likely for that funding type relative to Pure Grant. Full regression results are available in Appendix C.

The left side of Figure 1 depicts the policy incongruence results. As predicted by Hypothesis E1, officials see projects funded by Local Taxes as most likely to be spent on citizens’ priorities and Pure Grants the least. The coefficient on Local Taxes is -0.44 in the case of policy incongruence and -0.33 in the case of misuse, meaning that the probability that local officials chose a project as being more prone to policy incongruence or misuse jumped over 30 percentage points when the project was funded purely by grants and compared to one funded by local taxes. Matching Grant projects are viewed as in between Local Tax and Pure Grant, while Pork projects are viewed as only slightly better than those funded by Pure Grants. As Pork projects are effectively Pure Grants that were allocated by a state representative, this suggests that local officials believe the state representative has the ability, and electoral incentives, to ensure that the funds are used for projects valued by citizens. The right side of Figure 1 shows similar results for the Misuse condition in line with Hypothesis E2 (Misuse). The key difference is that Pork projects are now seen as the most vulnerable to misuse, even more than other Pure Grant projects. This could occur if state representatives use such projects to buy political support. Together, the results suggest that local policymakers believe that the ways in which a project is funded affect accountability.

As these results measure perceptions of the relative likelihood of misuse, one concern may

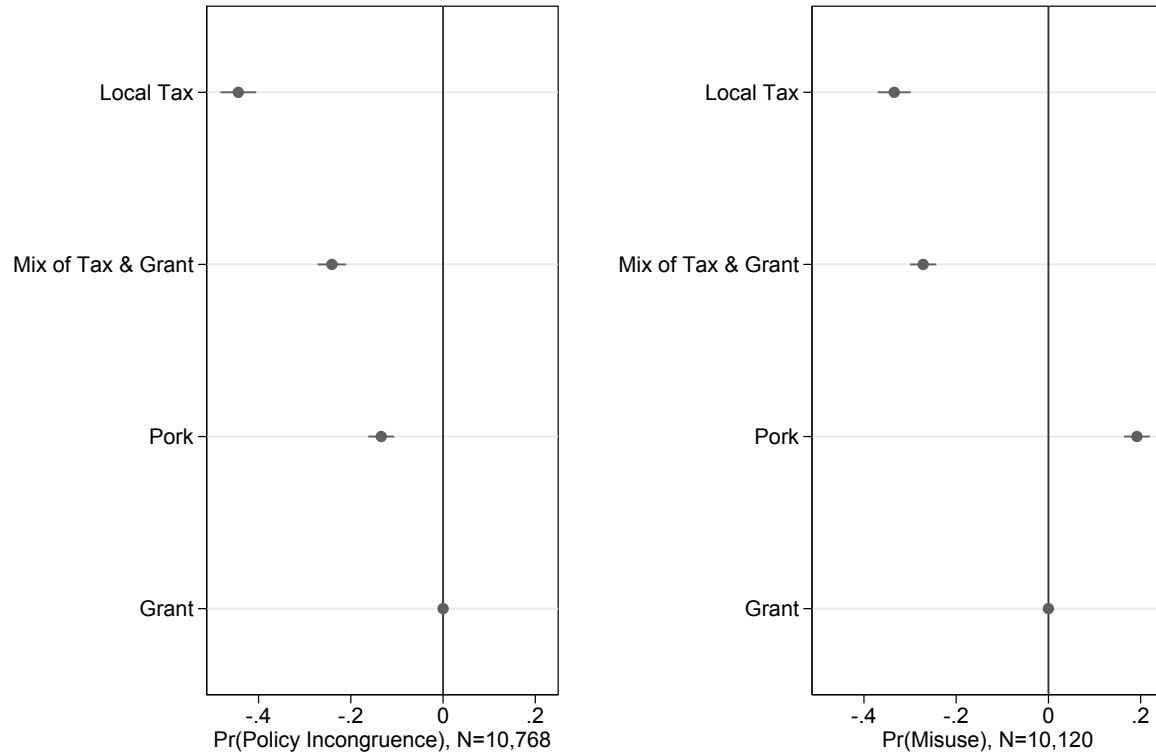


Figure 1: *Regression results: local policymakers' beliefs about revenue types, policy incongruence, and misuse (AMOS 2014).* Dots represent the coefficients from OLS regressions in which a dummy for whether local officials indicated that a project was more prone to policy incongruence (left) or misuse (right) was regressed against dummy variables for each type of revenue source; Pure Grant is the omitted category. Bars represent 95% confidence intervals. SE are clustered by respondent.

be that they reflect a very small underlying difference in the absolute likelihood that funds are misused. The responses to the direct question discussed above alleviate this concern. If differences were extremely small, we would expect respondents to disproportionately choose that they “somewhat agree” or even disagree with the statement. However, respondents were more likely to choose “agree” or “strongly agree” (37.5% of respondents) than “somewhat agree” (24.2% of respondents). This suggests that respondents see more substantial differences between the revenue sources. At the same time, even a small difference in misuse may be substantively meaningful. In 2015, local governments spent \$1.7 trillion, of which \$544 billion (32%) came from grants. If taxation reduced the amount of money misused by only one percentage point, replacing grants with local taxes would reduce the money lost to misuse by \$5.44 billion dollars, enough to fund public pre-K education for almost 850,000 students per year (US Census Bureau, 2015).⁹ More important for this paper, however, is that municipal officials’ perceptions are consistent with our expectations that politicians believe they face more accountability with locally derived tax revenues than outside ones.

3.2 Taxation and Bottom-up Accountability

We argue that revenue source affects the likelihood of misuse or policy incongruence because officials face stronger bottom-up accountability pressures to spend tax dollars well (as proposed by Hypotheses T1- T3). To provide an initial test of this mechanism, we included an experimental module in AMOS 2012 in which respondents were asked whether they agreed or disagreed with a set of statements; each respondent was randomly assigned to receive a module about either local tax dollars or some kind of outside grant. In total, we included six statements; each went to a randomly chosen subset of the full AMOS 2012 sample. Table 2 lists the text of each question, grouped by which hypothesis it tests, and reports the percentage who agreed with each statement in each treatment group. Responses used a 7-point

⁹State-funded pre-K costs on average \$6,408 per student (Stokes, Kyle, 2013).

Likert scale; this was transformed into an indicator variable for whether a respondent at least “somewhat agreed”, corresponding to 5 or above on the scale. The “Diff.” column shows the difference-in-means, with standard errors from a bivariate OLS regression in parentheses. The effect size can therefore be interpreted as the difference in the percent of officials who agreed with the statement in the tax and grant conditions, respectively: this is a hard test, as it will only capture those who are moved from disagreement to agreement by the treatment. For robustness checks on this module, see Appendix C.

If bottom-up accountability is stronger for local taxes, officials should be more likely to believe they face electoral costs for policy incongruence or misuse involving such funds. Rows 1 and 2 of Table 2 provide some support for this hypothesis (HT1: Electoral). Row 1 shows that while 86% of officials agreed that a local politician would lose office as a result of a minor scandal involving a federal grant, this increases to 95% when the scandal involves local taxes. However, a similar question involving a no-bid contract did not produce similar results. The effect size is small and far from statistically significant.

Rows 3 and 4 provide initial evidence for the behavioral hypothesis (HT2: Behavioral). Officials were 30 percentage points more likely to agree that citizens care strongly about how tax revenue is spent, relative to grant spending, and 28 percentage points more likely to agree that their constituents think of local tax dollars as “their” money. This suggests that a higher number of officials believe that citizens are significantly concerned with how tax dollars are spent than with grant dollars; the perceived increased sense of ownership is also in line with De la Cuesta et al. (2019) and Paler (2013).

Rows 5 and 6 of Table 2 support the hypothesis that taxation increases citizens’ willingness to seek information about tax spending (Hypothesis T3: Informational). Municipal officials are 8.5 percentage points more likely to agree that local media “pay close attention to how the city spends” local tax revenue, compared to grant revenue, and 18 percentage points more likely to agree that local citizens “seek out information” about how tax funds are spent. However, even in the tax treatment, a minority of respondents believed that

#	Statement	% who agree			Obs.
		Tax	Grant	Diff.	
Hypothesis T1: Electoral Pressures					
1	If a local politician were involved in a minor scandal involving [local tax/federal grant] dollars, he would lose the next election.	96	86	9.5* (2.2)	708
2	If a local politician used [local tax/federal grant] dollars to award a no-bid contract to a business associate, he would lose the next election.	88	85	2.3 (2.6)	711
Hypothesis T2: Citizen engagement					
3	Local citizens care strongly about how the city spends [local tax/unrestricted grant] revenue.	77	47	30.1* (3.1)	902
4	My constituents think of [local tax/state and federal grant] dollars as “their” money.	88	60	27.9* (3.3)	666
Hypothesis T3: Citizen Information					
5	Local media pay close attention to how the city spends [local tax/unrestricted grant] revenue.	64	56	8.5* (3.3)	902
6	Local citizens seek out information about how the city spends [local tax/unrestricted grant] revenue.	49	31	18.0* (3.2)	905

Table 2: *Revenue source and bottom-up accountability (AMOS 2012)*. Results show the percent of respondents who at least “Somewhat Agree” with the statement in each treatment group. “Diff” indicates the difference in average agreement between the Tax and Grant treatment groups (standard errors in parentheses). The number of observations is lower for statements 1, 2, and 6 because they were included on different waves of AMOS 2012. * $p < 0.05$.

citizens were likely to seek out information at all; this points to the potential limitations of the information mechanism.

While the results in Table 2 suggest a relationship between taxation, citizen behavior, and the electoral pressures leaders face, they do not directly connect these elements. To address this, AMOS 2014 included an experimental module in which respondents were asked to evaluate the likelihood that a minor scandal would result in a number of consequences for the official involved. The experiment included three treatment conditions: “Local taxes,” “Outside grants,” and a “Mix of tax and grant funds.” The third category is similar to matching grants, allowing us to replicate our previous finding that these are seen as falling in between pure tax- and grant-funded projects.¹⁰ Responses to each question were measured using a 7-point Likert scale, where 1 = “Very Unlikely” and 7 = “Very Likely.”

Figure 2 graphs the results of four OLS regressions in which the dependent variables were indicators for whether the respondent thought the outcome was at least somewhat likely to occur (5 or higher on the 7-point response scale), and the independent variables were indicators for the funding source, with “Grant” as the omitted category. The dots represent the coefficients from the regressions, and the bars report 95% confidence intervals. Results are robust to considering the full 7-point scale and controlling for official- and municipal-level variables (see Appendix C).

The results support the hypothesis that officials are more likely to perceive the misuse of tax funds as resulting in electoral consequences (Hypothesis T1: Electoral). Panel C shows that respondents were 7.6 percentage points more likely to believe that officials who misused tax funds would be at least somewhat likely to face a challenger in the future ($p=.00$), and while 71% thought it likely that misusing grants would result in losing office (Panel D), this increased to 80% when tax funds were misused ($p=.013$). This replicates and strengthens the findings from the previous analysis: even conditional on a scandal, which implies some

¹⁰Due to power concerns, we did not include pork projects as a potential revenue source in this experiment.

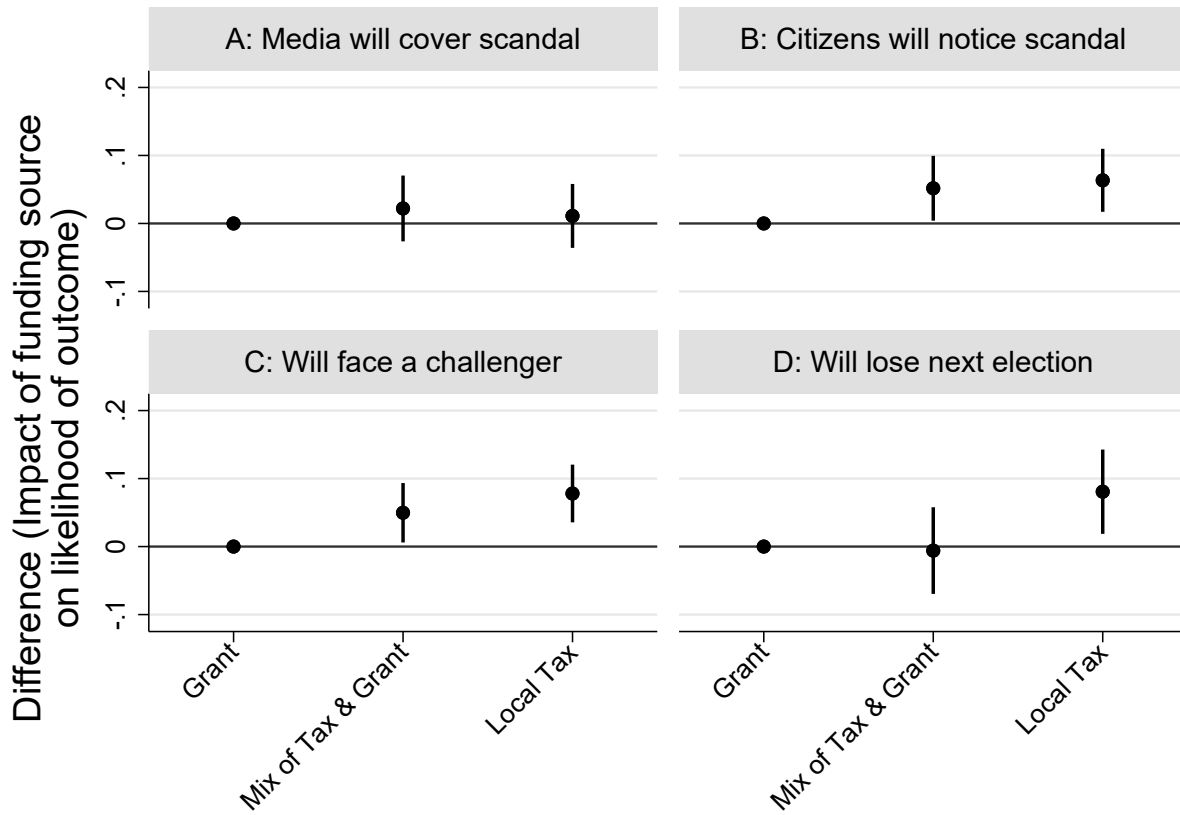


Figure 2: *Effect of revenue source on local policymakers' perceptions of the consequences of a minor scandal (AMOS 2014).* Dots represent coefficients from one of four OLS regressions. The dependent variable in each regression is a dummy variable indicating whether a respondent thought the outcome was at least “somewhat likely” to occur. The independent variables are dummies for whether the scandal involved local taxes or a mix of tax and grant funds; pure grant funding is the omitted category. Bars show 95% confidence intervals. The number of observations for each statement ranges from 1,103 to 1,106. For full regression results see Appendix C.

degree of publicity, officials are more likely to believe that citizens will punish the official involved severely when tax dollars have been misused.

The module also allows us to test the extent to which the electoral result is driven by citizen engagement (Hypothesis T2) and information (Hypothesis T3). Panel B shows that, relative to the Grant condition, officials were 6 percentage points more likely to report that citizens were at least somewhat likely to notice a scandal when funding was derived entirely from local taxes ($p=.01$), which is consistent both with higher citizen engagement and higher willingness to seek information. This difference is about the same when asked about a mix of tax and grant funds ($\text{diff}=0.05$, $p=.04$). However, contrary to the information hypothesis, there is little evidence in Panel A that officials are more likely to believe local media will cover a scandal when tax funds are involved. Note that in contrast to the analysis in Table 2, this module evaluates the proposed mechanisms in reference to an *existing* scandal. This likely mutes taxation's effect as the term "scandal" presupposes at least some publicity, which would mean that the media is already covering it. Indeed, 88% of respondents believed it was at least somewhat likely that media would cover the scandal.

Interestingly, the increased belief in electoral penalties does not seem to apply for scandals involving a mix of tax and grant funds. When the scandal involved a mix of funding types, respondents were more likely to believe that it will garner more citizen attention and lead to electoral challenges (Panels B and C), but were not more likely to believe it will result in an electoral loss compared to the pure grant condition (Panel D). Because the results for the informational effects are the same across the Tax and Mixed conditions, this suggests that policymakers believe information alone is insufficient: citizens must also be willing to translate information into action, and officials appear to be less likely to believe this for projects funded by a mix of tax and grant funds as opposed to those funded only by local taxes.

3.3 Grants and Top-Down Monitoring

The results thus far show that local elected officials generally perceive stronger electoral pressures to allocate and spend tax funds in accordance with citizens' preferences, relative to grant funds. These differences are driven primarily by the degree to which citizens are perceived as willing to seek information and subsequently sanction non-accountable officials in line with Hypotheses T1-T3. However, weaker bottom-up pressures to use grants well may not matter if grantor agencies are able to compensate with stronger top-down pressures; these could involve monitoring how grant funds are used and withholding future funding from municipalities who misuse grants. This section provides evidence on how officials perceive the pressures that grantors are able to exert upon municipalities (as per Hypotheses G1–G4) and discusses why they may not fully counteract weak bottom-up accountability for grants. While our earlier hypotheses were primarily tested using experiments, here we rely on descriptive data on politicians' perceptions of grantor agencies.

AMOS 2014 included a non-experimental module that asked respondents whether they agreed or disagreed with a number of statements concerning top-down monitoring of outside grants. Respondents were randomly assigned to see 3 of the 7 statements. Responses were measured using a six-point Likert scale. For analysis, these were recoded as indicator variables that take a value of “1” for those who chose “somewhat agree” (a 4 on the scale) or higher. Table 3 summarizes the results of these questions; Appendices B and C present the question wording and full distribution of responses. The first two questions concern grantor information and attitudes regarding policy incongruence (Hypotheses G1 and G2). They ask respondents whether they agreed that grantor agencies have good information about local citizens' priorities, and whether they thought grantor agencies care strongly whether grants are allocated to citizen priorities. Only 55% agreed that agencies had good information, while 47% believed that agencies cared whether a grant-funded project was spent on citizen priorities. Just 35% of respondents agreed with both statements, indicating that the majority of municipal officials believe that grantors either do not know or do not care

when officials spend grants on their own priorities, rather than those of citizens. This is in line with our expectation from Hypotheses G1 and G2 that municipal officials face only weak pressures from grantor agencies to spend grant funds on citizen preferences, and helps explain the results in Figure 1 on policy incongruence.¹¹

#	Statement	Average Response	% who at least "Somewhat Agree"	Obs.
Hypothesis G1: Grantor Information on Policy Congruence				
1	Grantors understand citizens' priorities	3.48 (1.34)	55	348
Hypothesis G2: Grantor Priorities				
2	Grantors don't care about citizens' priorities	3.63 (1.45)	53	341
Hypothesis G3: Grantor Monitoring				
3	Need to report all budget changes	4.72 (1.14)	87	306
4	Grantors heavily monitor spending	4.42 (1.15)	81	349
Hypothesis G4: Grantor Sanctions				
5	Grantors notice how money spent	4.87 (1.08)	89	337
6	Misuse reduces chance of getting same grant again	5.07 (1.07)	92	330
7	Misuse reduces chance of getting other grants again	4.36 (1.37)	76	320

Table 3: *Beliefs about top-down monitoring of outside grants (AMOS 2014)*. Average response based on a 6-point Likert scale where 1="Strongly Disagree" and 6="Strongly Agree." Standard deviations reported in parentheses. Column 3 reports the percent of respondents who agreed at least somewhat with the statement (4-6 on the scale). The number of observations varies due to randomization of who was assigned to see each statement and nonresponse on some questions.

¹¹The findings are also in line with work on fiscal federalism arguing that local governments will be better able to target spending given citizens' preferences (Tiebout, 1956; Rodden, 2005), but suggest that these benefits may not accrue unless sufficient incentives are present.

Statements 3-7 examine perceived top-down pressures to control misuse (as per Hypotheses G3 and G4), and suggest that grantors are much more concerned with misuse compared to policy incongruence. Just over 80% of respondents agree that grantors monitor spending heavily, while 89% agree that grantors will notice how grant funds are spent. Statements 6 and 7 show that officials also believe that such misuse will have a negative impact on the likelihood that the municipality gets future grants either from that same agency (92% agree) or from other agencies (76% agree). Together, these responses are consistent with our prediction that top-down accountability pressures are strong when considering corruption and other misuse of funds, and that different grantor agencies are able to coordinate on punishment. Why, then, do we still see that grant-funded projects are perceived as more open to misuse than projects funded by local taxes?

Top-down accountability pressures appear to operate through the threat of withholding future grants, whereas bottom-up accountability directly impacts officials' re-election chances. If potentially self-serving officials have relatively short time horizons, they will care more about reelection this year than about access to grants several years down the line. Evidence from AMOS 2014 supports the claim that municipal officials have short time horizons—only 50% of respondents believed that they would still be in municipal government in 5 years' time. Thirty-four percent anticipated holding no office after this time, while 11% believed they would hold a higher elected office. As the modal municipal council term is 4 years (National League of Cities, 2015), the modal councilor anticipates holding office for two terms, sharply reducing long-run concerns but increasing short-term electoral fears. This will be especially true if grant funds are spent over a longer time horizon, as is the case for multi-year capital improvement projects. However, this claim is difficult to evaluate using the AMOS data; shorter time horizons should not affect officials' perceptions of the costs of misuse or policy incongruence, only the weight placed on those consequences relative to any short-term benefits.

4 Robustness Checks

In Appendices C and D, we thoroughly examine the robustness of the results presented above. We find that the results are robust to many different model specifications, including using the full Likert scales as the dependent variable instead of binary indicators; controlling for respondent- and municipal-level characteristics; and including state-level fixed effects.

We also find that the descriptive results and treatment effects hold across many subpopulations of respondents.¹² In Appendix D, we discuss why the results could potentially vary across a variety of individual- and municipal-level variables. For example, female officials arguably face higher electoral costs for corruption (Esarey and Schwindt-Bayer, 2018), and their attention to issues of greater concern to women (Holman, 2014) may improve policy congruence. Female officials, then, may be generally more responsive to citizens' preferences while believing that electoral pressures and sanctions are generally higher for any kind of misuse, reducing their incentive to use tax and grant funds differently. Conversely, they may also be more sensitive to any perceived differences in electoral pressures between taxes and grants, increasing the gap for women compared to men. Partisanship may also matter; Republican officials may possess more negative attitudes about inter-governmental grants (e.g., Lazarus and Reilly, 2010), leading them to view grants as more prone to incongruence and misuse. There might also be differences based on municipal characteristics. Harden (2016) finds that wealthier constituents—who tend to be white—have higher demands for policy congruence while low-income constituents—who are more likely to be Black—prefer service and allocation representation. These differences in representational demands could affect

¹²In considering these potential heterogeneous treatment effects, it is important to note that the theories regarding heterogeneity were not developed prior to data collection. Thus, the research design was not set up for such tests, and the subgroup analyses are often underpowered. Nonetheless, we believe it is important to examine potential heterogeneities to spur future work on this topic and demonstrate the robustness of the results.

municipal officials' perceptions of electoral accountability with different revenue sources. Finally, larger municipalities have more ambitious officials, organized interest groups, and electoral competition (Oliver, Ha and Callen, 2012). This could increase baseline levels of accountability, reducing the effect of taxation on perceived citizen pressures.

The heterogeneity analysis in Appendix D finds that our main treatment effects hold for all subgroups tested. We also find only limited evidence of heterogeneous treatment effects. The most consistent finding is that Republican and conservative officials were even more likely than Democrats and liberals to believe that policy incongruence and misuse were lower with taxes compared to grants. Officials from municipalities with higher incomes were also more likely to believe that incongruence was lower with taxes while those from cities with a higher proportion of black residents were less likely to believe so. However, we fail to find similar differences in our mechanism tests, suggesting that further work is needed to see if the results from the subgroup analyses replicate and, if so, to better understand what drives these differences.

Another potential concern with our analysis is that projects funded by taxes and grants may be systematically different in ways unrelated to citizens' accountability pressures, and that these differences explain our treatment effects. Two potential factors are if tax-funded projects are typically more *visible*, and this drives higher accountability pressures, or if tax-funded projects typically *cost* more, and this explains why citizens care more about them. To address visibility concerns, we examined the budgets of several randomly selected cities across the US and found that while grants and local taxes often fund similar budget items, grants are more likely to fund highly visible capital projects such as infrastructure or new structures in public venues like parks and libraries. If the visibility of projects generally funded through different sources affects officials' responses, it should lead officials to believe they face more electoral pressure with grants instead of local taxes. Concerns about differing costs are mitigated by the fact that US municipalities rely roughly equally on taxes and grants (US Census Bureau, 2015).

Both the visibility and cost concerns are also addressed in the research design of our questions. The non-experimental question, which asked officials directly about whether taxes or outside revenue sources are more likely to be spent on citizens' preferences, clearly asked whether they believed this was the case even when everything else about the spending was the same. In the forced-choice experiment (Figure 1), the question prompt specified that the different funds would be used for capital improvement projects, which at least partially controls for possible differences. Capital improvement projects are commonly funded by both taxes and grants (Pagano, 2002), thus making the question realistic while controlling for the fact that, in general, revenue sources may vary by budget sector. Visibility is also addressed in our questions about the consequences of a scandal (Figure 2); as scandals presume some level of publicity, this effectively controls for differences in visibility across funding types.

We also address the visibility and cost concerns with our mechanism tests. In Table 2, statements 3, 4, and 6 all concern citizens' beliefs *before* funds are actually allocated to specific projects and spent, and thus before other differences could emerge. It is possible that citizens care more about tax dollars because they suspect that in the future they will be allocated to projects they care more about. However, a more straightforward argument is that they simply feel more ownership over money they have personally contributed to the budget, and politicians recognize this.

5 Conclusion

Previous work on taxation and accountability suggests that tax-reliant governments are more likely to honor citizens' preferences and are less prone to corruption and misuse. However, there has been little work testing whether the effect of taxation on citizens' willingness to monitor and sanction officials is sufficiently strong to affect elected officials' behavior, or whether officials even recognize that these pressures exist. By measuring elected US municipal officials' perceptions of how funds are used, and the top-down and bottom-up

pressures they face in allocating and spending such funds, we demonstrate that municipal officials believe local governments are more likely to allocate funds to citizens' priorities, and less likely to misuse them, when they are derived from local taxes rather than outside grants. Experimental and observational survey data shed light on the mechanisms through which revenue affects decision-making. When tax funds are at stake, officials are more likely to believe that scandals will lead to electoral losses, and that citizens will seek out information about government spending and actually take action against any misuse. While granting agencies are perceived as willing and able to punish misuse, this does not appear to be strong enough to compensate for weak bottom-up accountability pressures for grants.

Our results have implications for the study of decentralization, suggesting that funneling taxes through intergovernmental grants obscures funds' origins and lowers citizens' accountability demands; any welfare gains from decentralization may be tempered by the extent to which local units depend on outside funding. One common recommendation to mitigate these effects is to require municipalities to provide matching funds in the form of local taxes. However, we find that while matching funds reduce the gap in misuse and policy incongruence, they may not eliminate it entirely.

This paper also speaks to the literature on representation and policy congruence in US local politics (Trounstine, 2010). Recent empirical work on US municipalities finds that policy outcomes generally reflect citizens' ideological preferences (Tausanovitch and Warshaw, 2014), though congruence is far from perfect. Previous explanations for policy incongruence focus on municipalities' constrained ability to make policy due to overlapping jurisdictions and higher-level policies (Morgan and Watson, 1995; Wolman, Strate and Melchior, 1996; Gerber and Hopkins, 2011) or their need to compete for high-income taxpayers who, as a result, have a disproportionate effect on policy (Hunter, 1953; Peterson, 1981). This paper provides an additional explanation for why congruence is not perfect in US municipalities—local policymakers believe they have more leeway in how they allocate outside revenues.

Our results suggest several areas for future research. In this paper we have implicitly

assumed that accountable politicians should prioritize citizens' preferences over their own. However, if an official has better information than citizens, or cares more about long-run impacts, there may be cases where insulating officials from citizens' pressures could lead to improved outcomes (Fox, 2007). If so, this makes the equilibrium welfare effects of revenue source less clear. Similarly, granting agencies may be unwilling to monitor policy incongruence because they prefer that municipalities spend grants in line with the agency's preferences, rather than those of citizens. We were also unable to examine how revenue source may impact the geographic distribution of public goods and services within a municipality. If taxpayers demand more representation, it could lead to public goods being placed too often in wealthy, tax-paying areas and less in the areas that need them most. Finally, future work is needed to examine whether the findings here hold in other settings, such as developing countries where democratic norms and institutions are still being established.

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