## The Provision of Local Public Goods in Diverse Communities: Analyzing Municipal Bond Elections

Jacob S. Rugh Princeton University
Jessica Trounstine University of California, Merced

Scholars have shown that diversity depresses public goods provision. In U.S. cities, racial and ethnic divisions could seriously undermine investment. However, diverse cities spend significant amounts on public goods. We ask how these communities overcome their potential collective action problem. Using a new data set on more than 3,000 municipal bond elections, we show that strategic politicians encourage cooperation. Diversity leads officials to be more selective about requesting approval for investment and more attentive to coalition building. We show that diverse communities see fewer bond elections, but that the bonds proposed are larger and pass at higher rates. Diverse cities tend to offer voters bonds with more spending categories and are more likely to hold referenda during general elections. As a result, diverse cities do just as well as homogenous cities in issuing voter-authorized debt. Thus, political elites perform an important mediating function in the generation of public goods.

ver the last several decades the United States has become significantly more diverse. In 1970 the population was about 83% white, 11% black, and 5% Latino. By 2009 whites had declined to about 65% of the population while black, Latino, and Asian/Pacific Islander communities grew to comprise 12%, 16%, and 5%, respectively. The effects of these changes are potentially enormous, particularly with regard to the provision of public goods.

A more diverse nation may be less likely to provide essential communal benefits for its residents. Across a range of fields and locations scholars have shown that diversity is associated with a weaker commitment to the provision of public or collective goods (Alesina, Baqir, and Easterly 1999; Alesina and Spolaore 1997; Easterly and Levine 1997; Glaser 2002; Habyarimana et al. 2007, 2009; Poterba 1994; Putnam 2007). Additionally, a large literature has shown that race plays an important role in determining political attitudes and policy preferences (Dawson 1994; Federico and Luks 2005; Kinder and Sanders 1996; Kinder and Winter 2001; Kluegel and Smith 1986). In particular, scholars have provided evidence

that white voters resist spending money on goods and services when racial and ethnic minorities are believed to be beneficiaries (Gilens 2009; Luttmer 2001; Sears and Citrin 1985).

In the United States local government is a primary generator of public goods. Given that racial and ethnic minorities often make up substantial shares of city populations, whites' unwillingness to contribute to public goods might seriously undermine collective goods provision at the city level and thereby for the nation as a whole. Indeed, in a seminal piece of research on this topic, Alesina, Baqir, and Easterly (1999) show that racially diverse cities allocate smaller shares of their budgets to public goods like education, roads, sewers, and trash pickup.

But new work by Boustan et al. (2010) reveals that levels of public goods are actually higher in diverse communities. Analyzing municipal and school district budgets, Boustan et al. find that increased racial fractionalization correlates with larger government expenditures overall and in many spending categories individually (e.g., police, fire, health, and hospitals). These results indicate that increased diversity may not

<sup>&</sup>lt;sup>1</sup>An online appendix with supplementary material for this article is available at http://journals.cambridge.org/JOP. Data and supporting materials necessary to reproduce the numerical results will be available upon publication at http://faculty.ucmerced.edu/jtrounstine.

<sup>&</sup>lt;sup>2</sup>http://www.census.gov/population/www/documentation/twps0056/twps0056.html

<sup>&</sup>lt;sup>3</sup>http://www.census.gov/popest/national/asrh/NC-EST2009-srh.html

necessitate negative outcomes. Given the well established propensity toward noncooperative behavior in diverse communities, how are diverse cities able to produce public goods? How do they solve their collective action problems?

The answer to these questions is the focus of our article. We argue that actions taken by strategic politicians provide the opportunity for diverse communities to invest in public goods. Politicians generate cooperative behavior by determining what to put on the agenda and in what form, allowing them to build supportive coalitions (e.g., Frohlich, Oppenheimer, and Young 1971; Olson 1965). Officials in racially and ethnically diverse cities should be particularly skilled at this role because racial and ethnic fissures underscore many conflicts in city politics. Winning election to office and generating public policy both require officials to be especially attentive to coalition building when preferences are divergent (Kaufmann 2004; Tedin, Matland, and Weiher 2001). We use a new data set on municipal bond elections to provide evidence of these processes. Municipal bonds are an excellent venue for analyzing the effect of racial and ethnic diversity on public goods investment because bonds must be approved by voters and because they are used to fund a wide variety of public projects at the local level. Furthermore, the amount of money at stake in bond elections is enormous. Over the 16-year period that we study voters had the opportunity to approve more than \$64 billion worth of municipal debt (about \$39 million per year per city). With annual revenues in our cities averaging about \$246 million, municipal bonds represent a significant share of the funds cities raise.

We find, as existing research might predict, that racially and ethnically diverse communities are likely to see fewer bond elections. However, we also find that once a bond is put before the voters, diverse communities are much more likely to approve the bonds. The bonds that diverse cities approve tend to fund more varied projects and more importantly, tend to include larger amounts of money. While diverse cities pass fewer bonds they catch up to homogenous cities with larger packages. As a result, diverse cities do just as well as homogenous cities in issuing voter-authorized debt. We argue that diversity leads political officials to be more selective about requesting approval for public goods investment and to be more attentive to coalition building. We provide evidence of these strategies by showing that in diverse communities municipal bond packages are more likely to target spending toward multiple purposes and are more likely to be placed

on the ballot during general elections (when turnout of residents who are more supportive of investment is higher). In the end, diverse cities see higher bond passage rates on larger bond packages. Thus, political elites perform an important mediating function in the generation of public goods.

Our research is consistent with two mechanisms that may drive the negative correlation between diversity and spending allocated toward public goods. The first is that diverse cities may harbor a greater degree of preference divergence over the right bundle of taxes and services, making it harder to agree on investment in particular goods (Alesina, Baqir, and Easterly 1999; Teibout 1954). The second mechanism potentially driving lower investment is that individuals may be reluctant to invest in collective goods because they receive a disutility from "other" groups' consumption of the good (Kruse 2005; Luttmer 2001). In our case, this would imply that individuals are less likely to support public good expenditures when the good will be accessed by or provide a benefit to members of different racial or ethnic groups. We expect this disutility to be largely driven by white residents who prefer not to provide public goods that will be utilized by minorities (Jackman 1994; Quillan 1995; Tolbert and Hero 1996). Our results suggest that both may be important factors in racially and ethnically diverse cities as we find that politicians seek to encourage bond support by bundling many public goods into single bond packages and seeking high turnout (which frequently decreases the white share of the electorate).

The remainder of the article proceeds as follows. First, we present background information on municipal bonds and the factors that lead governments to issue debt and voters to approve it. Then we present empirical evidence showing that diverse cities see fewer bond elections but higher passage rates of larger bonds. We analyze the ways in which bond packages differ in such places reflecting what we believe to be strategic behavior by political officials. In our conclusion we speculate on the insights that might be gleaned from our results regarding the contributors to the negative relationship between diversity and public goods investment.

## Municipal Bond Election Background

The scholarship exploring and explaining collective investment in public goods is voluminous. Famously expressed by Olson (1965), communities face a paradox

of participation because withholding contributions to the collective effort might be individually rational even if it produces a collectively irrational outcome. Many solutions to the dilemma have been offered. Importantly for our analysis, Frohlich, Oppenheimer, and Young emphasize the role of political leaders in the provision of collective goods. They argue that collective goods will be provided "when someone finds it profitable to set up an organization (or make use of an existing organization), collect resources, and supply the collective good" (1971, 6).

So, political leaders ought to be most likely to issue debt for public goods when they can profit from doing so. Evidence from state and national governments supports this contention. For instance, Clingermayer and Wood (1995) argue that issuing debt allows elected officials to claim credit for new public projects while postponing painful repayment. Their evidence indicates that this is particularly likely to be the case when officials' incumbency status is jeopardized by political competition. Other scholars highlight the positive correlation between debt issuance and disagreement. Alt and Lowry (1994), for example, find that divided state governments are more likely to face revenue and expenditure imbalances while Roubini and Sachs (1989) find that a lack of consensus in the government leads to deficit in OECD countries.

Thus, we might expect that as a result of division, diverse cities would be more likely to issue debt. The problem with such a prediction is that a substantial proportion of municipal debt requires electoral approval. If diversity generates disutility over others' consumption of public goods and/or preference divergence, it would make no sense for these same voters to approve municipal debt to fund large, public projects. In other words, the passage of debt in local elections represents a good measure of voters' willingness to invest in public goods. If diversity depresses the tendency toward public goods investment, it ought to depress the total amount of debt voters approve as well. As we will show, this contention is not supported by our data. Instead we find

<sup>4</sup>Nearly all cities in the United States are prevented by state law from running deficits. They rely on two different types of municipal debt to finance the building and maintenance of capital improvements. Revenue bonds represent debt that is to be repaid by a specific revenue stream, such as bridge tolls or sewage fees. Typically these bonds can be issued by city officials without approval from voters and bond holders are not provided with a constitutional guarantee of repayment. General obligation (GO) bonds, on the other hand, are backed by the full faith and credit of the city and in most cities require a vote by the residents for passage. These are the bonds we analyze.

that political leaders use identifiable strategies to encourage bond passage.

Typically, bond proposals go through three stages of selection prior to voter approval or defeat: first, ideas are formally proposed to the city council by local residents/groups, community boards, and/or municipal agencies; second, the council selects from these proposals to ratify a preliminary list for public comment; and third, the council votes whether or not to place the bonds on the ballot. The final stage of the process is a bond election. It is the councils' decision to place the bond on the ballot and voters' collective decision to approve the bonds that are the subject of our analyses.

A substantial body of work in political economy has evaluated the factors that lead cities to issue debt. Many of the results are predictable (see Hildreth 1993 for an overview)—cities issue debt when they have a need for development, when they lack up front capital, when they have the ability to repay, when borrowing costs are low, and when raising taxes is difficult. But a handful of articles have shown that a larger proportion of nonwhites increases debt costs and/or decreases the likelihood of debt issuance (Aronson and Marsden 1980; Moon and Stotsky 1993). Hopkins (2009) analyzes voter approved tax limitation overrides in Massachusetts towns and finds that increasing homogeneity increases the likelihood that elites will place an override on the ballot. If diversity provides a higher hurdle for collective goods investment then there is good reason to expect that diversity and bond proposal will be negatively correlated.

It is less clear what we should expect for the relationship between diversity and bond passage. Unless politicians in diverse cities are worse at predicting voter support there is no reason to expect that diversity would depress bond passage conditional on a bond being presented to voters. On the contrary, we think that there are reasons to expect politicians in diverse cities to be more skilled at coalition building. In diverse cities, where racial and ethnic dividing lines are often the source of conflict (Kaufmann 2004), officials need to build broad-based coalitions to win elections and to generate policy on what can be fractious city councils. These skills might transfer to building bond coalitions as well, making officials in diverse cities well equipped to identify strategies

<sup>&</sup>lt;sup>5</sup>Approximately 20% of the cities in our data elect city councilors by district. While some of these districts will be diverse, high levels of segregation suggest that many will be homogenous. When city councilors represent homogenous districts in diverse cities they must build coalitions on the city council to make policy. For a description of the type of log-rolls generated by these types of councils see Simpson (2001).

that will lead to successful bond passage even in the presence of divergent preferences.

Bond passage may also be more of a necessity in diverse cities if elites believe that raising general taxes immediately to pay for future public goods will be unpopular. Glaser (2002) finds that in diverse settings voters are more likely to support public goods expenditures when they have more choices and are able to directly control the allocation of resources. To the extent that voters in diverse cities perceive bonds as a more targeted form of revenue raising and expenditure, officials may prefer bonds to increasing tax rates through the legislative process.

We find that racial and ethnic diversity does depress the likelihood that a city will have a bond election, but it increases the probability of passage conditional on proposal. We argue that this is a result of strategic behavior by politicians. Knowing that diverse communities are less likely to agree to invest in public goods, politicians put fewer bonds on the ballot. But elites are also able to help such communities overcome their collective action problem. One mechanism they use is the development of multicategory bond packages. Similar to the generation of policy coalitions in Congress, this strategy allows elites to build winning electoral coalitions by ensuring expenditures will satisfy the preferences of a variety of different groups (e.g., Evans 1994; Shepsle and Weingast 1981). Instead of presenting voters with a single bond to buy a new fire truck, elites might offer voters the chance to approve a fire truck bond alongside a bond to build new parks and a bond to repair roads. The more heterogeneous the preferences of the community, the more important it should be to include multiple spending targets in a single package in an effort to satisfy different constituencies. In bundling these desired funding targets into the same package, elites essentially force voters to support their neighbors' demands if they want their favored project funded and encourage otherwise opponents to support the bond.

Elites in diverse cities should also be more likely to place these bonds on the ballot in general (as opposed to nonconcurrent or primary) elections. Compared to general elections, nonconcurrent elections produce lower turnout and an electorate that represents a different subset of the population. Lower turnout (e.g., nonconcurrent) elections have electorates that are whiter, wealthier, older, and better educated than the city as a whole (Hajnal 2010). Given what we know from research on public opinion regarding government spending, these may be the very groups that are least likely to support investment in public goods, particularly if the expenditure is viewed as benefitting

minority residents (Federico 2005; Gilens 1996, 1999; Luttmer 2001; Sears and Citrin 1985). In a survey of voters in a school bond referendum, Tedin, Matland, and Weiher (2001) found that blacks and Latinos were more likely than whites to approve the bond, as were younger voters, and more racially tolerant voters. This means that in diverse cities, general elections may be more likely to bring voters to the polls that are supportive of public goods investment. As a result we expect elites in diverse cities to strategically place bonds on the ballot in general elections.

We note that placing bonds on general election ballots may not be an appropriate strategy for encouraging passage in all contexts. In homogenous communities public goods expenditures are less likely to be understood as a benefit to an "outgroup" so changing the timing of the election is less likely to shift the preferences of voters regarding public goods investment. In other settings, higher spending proponents may be more likely to dominate the election when turnout is *lower*. For example, Berry (2009) argues that special districts produce increased expenditure because turnout tends to be low in special district elections. In these typically off-cycle, lowvisibility elections, the beneficiaries of the special district's quasi-public good make up a large share of the electorate. But because the bonds we study are issued by cities (not special districts) and therefore tend to fund more broadly distributed benefits, we expect the opposite pattern. Existing research indicates that nonconcurrent city elections are disproportionately composed of homeowners and municipal employees who may not support bond passage if their priorities are lower property taxes and higher pay, respectively (Berry and Gersen 2010; Oliver and Ha 2007). General elections on the other hand should be more likely to draw people to the polls who support increased public goods investment (e.g., minority residents and poorer residents).

The effects of logrolling and general election timing should be twofold. Bond packages should be larger and passage rates should increase in diverse cities. As a result diverse and homogenous cities should approve similar amounts of bond debt. We find evidence for each of these hypotheses.

#### Data Set

In order to study the provision of public goods through bond elections we collected a unique dataset from *The Bond Buyer*, a daily investor publication

available through the ProQuest database. Starting in January 1991, The Bond Buyer has made available electronically a weekly summary of bond elections occurring throughout the nation. They report the proposed dollar amount and funding purpose of the bonds, election dates, and election outcomes (approval or defeat, but not total votes). 6 We extracted complete results for 13,405 bond elections held between 1991 and 2006 and converted them into a dataset. After excluding all special district, school district, county, and state bond elections we were left with a total of 3,077 municipal bond elections from a total of 1,236 cities.<sup>7</sup> Some cities held multiple bond elections each year, so we collapsed these data by city and year. This process resulted in 1,791 city-year observations when at least one bond election was held. Prior to collapsing the data we used keyword algorithms to sort the bonds into 19 categories of spending (key words and categories used, and a figure summarizing the targets of spending for proposed bonds can be found in the online appendix).

To ensure that our analysis of bonds takes into account the strategic behavior of political elites, our dataset includes cities that did not hold any bond elections during our time series. We built our dataset starting with the 25,375 cities included in the 2000 Census of Population and Housing. To these data we merged data from the 1990 Census of Population and Housing, from the 1987, 1992, 1997, 2002 Census of Governments, from the 2005-2007 American Community Survey, and from the 2005-2007 Current Population Survey. We linearly interpolated all variables and preserved observations between 1991 and 2006 to match the years for which we have bond data. After excluding states in which no bond elections are required, we are left with complete data for 12,593 cities and a total of 207,488 city-year observations. We then merged in our annual bond election data. Bond elections were held in 1,308 city-years. We assume that city-years not included in the bond dataset held no bond election in a given year. Summary statistics and sources for all of our variables are available in the online appendix.

<sup>6</sup>In an email communication with the authors the Bond Buyer statistics editor stated that "We report on every municipal bond election that we can find. We cannot guarantee that every election is in our database, but it's the most comprehensive available. The database covers only bond authorizations—elections held to approve tax increases or statutory amendments to permit an unspecified amount of bonding are not included."

<sup>7</sup>Cities were defined as any entity issuing a bond that was not a state, county, special, or school district and which matched to the list of all incorporated places from the 2000 Census of Population and Housing.

## **Analyses of Bond Elections**

We use a number of different dependent variables to study the effect of diversity on the provision of public goods. First, we analyze whether or not *Any bond* was on the ballot in a given city-year. Following this, we analyze bond timing, package makeup, proposed bond amounts, and bond passage conditional on the presence of bonds on the ballot. Finally, we analyze the total amount of debt voters approve.

Our primary independent variable is a measure of racial and ethnic *Diversity*—the proportion of the city that is nonwhite, including black (non-Hispanic), Asian (non-Hispanic), Latino, and other (non-Hispanic) residents.<sup>8</sup> We calculated group population shares by linearly interpolating Census of Population and Housing data for the years 1991-2006. This measure captures our expectation that diversity lowers public goods investment because white residents dislike investing in public goods that are believed to benefit minority populations. In using this measure we implicitly assume that preference divergence in diverse communities is most likely to be driven by differences between whites and all other minority groups rather than among minority groups.9 Local public opinion data suggests this is a reasonable assumption (Trounstine 2010). If bond elections are a good representation of investment

<sup>8</sup>We also tested our conclusions using a Herfindahl index (Diversity=1- $\Sigma$  (group<sub>i</sub>)<sup>2</sup>). The results are extremely similar because the measure is highly correlated with percent nonwhite. However, we think the Herfindahl index is less theoretically appropriate. A city that is 70% white and 30% black has the same Herfindahl index as one that is 30% white and 70% black. Because our hypotheses are driven by the behavior of white voters we present the results using percent nonwhite as our main independent variable. Adding each race/ethnic group to the model separately produces similar conclusions. Although the coefficients vary in magnitude and significance for each racial/ ethnic group in the various models, they are all the same direction. That is, relative to whites a larger proportion of blacks, Latinos, Asians, and other racial groups reduces the likelihood of a city holding a bond election and increases the probability of seeing multiple categories, general elections, larger amounts per capita, and higher passage rates. The one exception is the coefficient on percent Asian which is negative in the general election model. We believe that this striking similarity across groups justifies our use of the combined measure percent nonwhite. Finally, we tested for any nonlinearities between percent nonwhite and our dependent variables. No clear pattern emerged from plots and adding squared and logged versions of percent non white to the models yielded no significant results.

<sup>9</sup>Our theory also suggests that once white voters are a substantial minority of the electorate, the relationship between percent nonwhite and bond passage should disappear. Adding a dummy variable designating cities that are more than 75% nonwhite (accounting for the lower turnout levels among minority populations) confirms this intuition. In every case our results are substantially strengthened with the inclusion of this control.

in public goods, diversity should negatively predict the presence of bonds on the ballot.

#### **Control Variables**

We include a number of control variables that have been shown to be important in other research on public goods provision and which may be related to diversity. First, we include a measure of income *Inequality* calculated as the ratio of the mean to the median household income in the city. We take the log of this ratio to reduce the effect of extreme outliers and normalize the distribution. This measure accounts for the alternative possibility that any effect we find for diversity is actually driven by income polarization. The relationship between diversity and inequality is relatively weak (corr=0.14), so we interpret inequality as a separate form of preference divergence in cities. For this reason we expect high inequality to also produce fewer bonds.

To control for the possibility that the apparent relationship between diversity and bond issuances is actually a relationship between population size and bonds, we include the natural log of the city Population. Larger cities may generally be more diverse but may also have a harder time organizing collective action (Olson 1965). Alternatively, scholars have found that population is positively correlated with bond rating; meaning that big cities can issue debt more cheaply (Moon and Stotsky 1993; Simonsen, Robbins, and Helgerson 2001). So we might expect large cities to be more likely to issue and pass bonds. To account for the possibility that growing cities face a more pressing need to invest in capital improvements and may be becoming more diverse, we also include the one year Change in total population.<sup>10</sup> Hildreth (1993) argues that convincing voters of a need for borrowing is an important component of passage, so we expect this variable to be positively related to both submittal and approval. Education level of the population could play an important role in preferences for public good outlays if more educated publics have a higher awareness of the need for investment, so we include the proportion of the population with a College degree.

Tedin, Matland, and Weiher (2001) find that the size of the tax increase associated with a proposed bond is negatively correlated with passage. Although

we lack a measure of the tax increase associated with particular bonds, we are able to include a measure of total municipal Taxes per capita. Higher tax burdens could lead cities to vote down new debt in order to stave off future tax hikes. Alternatively, a high tax burden could encourage elites and voters to support bond passage in order to shift revenue raising to a future population of politicians and residents (Alesina and Drazen 1991; Alt and Lowry 1994; Baber and Sen 1986; Poterba 1994). This could be especially attractive in diverse cities if preference divergence makes it difficult for the city council to raise taxes and pass budgets. Because a city's ability to repay debt should influence elite decisions to issue bonds and the cost of debt, as well as residents' demand for capital investment we include Income per capita and Median home values (Clingermayer and Wood 1995; Moon and Stotsky 1993; Temple 1994). Both variables are also likely to be negatively related to diversity. Nonwhite incomes still lag behind white incomes and local politics scholars have shown that residents believe their property values to be negatively impacted by increasing minority populations (Boustan 2010; Danielson 1976).

We also include a number of variables that should be influential for elite decisions with regard to placing bonds on the ballot. The first of these variables is a measure of the city's Average Debt Cost. Ideally we would include a measure of each bond's interest rate, but these data are unavailable. Instead we use the city's annual debt interest payment divided by the total outstanding debt to symbolize these costs. Cities that find borrowing more expensive should be less likely to issue bonds. Secondly, scholars have shown that cities with appointed (as opposed to elected) officials charged with managing municipal finances benefit from lower borrowing costs, probably because appointed officials are viewed by lenders as being more likely to manage city finances with the primary goal of efficiency instead of political support (Vijayakumar 1995; Whalley 2009). For this reason we expect cities with City Managers (as opposed to mayor-council systems) to issue more bonds. Although bonds are not usually used to cover Revenue shortfalls (total expenditures minus total revenues), we include this measure as an indicator of a city's general need for new funding. We also include the proportion of the city's revenue that comes from Intergovernmental sources to indicate alternative mechanisms of funding. More revenue from other governments may decrease the need to issue debt.

<sup>&</sup>lt;sup>10</sup>Including a control for the proportion of the population that lives in urban areas as an additional measure of need does not change any of our results.

TABLE 1	Effect of Diversity	on Any Bond Being	g on the Ballot 1991–2006

	Without Fixed Effects		With All C Fixed Ef	
	Coefficient	St. Err	Coefficient	St. Err
Diversity	-0.650**	0.075	-0.304**	0.094
Inequality Log	-0.125**	0.136	-0.499**	0.153
Population Log	0.327**	0.009	0.303**	0.012
1 yr Change Population (thsds)			0.006	0.005
% College Degree			1.030**	0.218
Taxes Per Cap			0.009**	0.002
Income Per Cap (thsds)			0.007**	0.003
Median Home Value (10 thsds)			$\textbf{-0.004}^\dagger$	0.002
Council Manager			0.028	0.038
Revenue Shortfall (mill)			0.110**	0.045
Average Debt Cost			0.015**	0.005
% Revenue Intergovernmental			-0.205*	0.120
Home Rule			0.030	0.033
Total Services			0.020**	0.010
District Council			-0.012	0.032
Constant	-5.130**	0.083	-5.226**	0.193
N	207,488		207,488	
$R^2$	0.179		0.248	

Note:  $\dagger p < .10$  one-tailed, \*p < 0.10, \*\*p < 0.05; Probit regressions; State fixed effects included but not presented in second model, Robust standard errors clustered by city

Finally, we add institutional variables that should affect bond proposal. We include a dummy variable noting whether the city has *District* or at-large elections. District elections may exacerbate divergent preferences (particularly in segregated communities), making it hard for the council to agree to raise taxes. For this reason we expect district councils to issue more bonds. We also add a dummy variable noting whether or not the city has *Home-rule status*, offering elites more flexibility in issuing bonds when they please. Because city responsibilities vary widely we also include a measure of the total number of *Public services* the city operates. <sup>11</sup> We add state fixed effects to account for important cultural and legal variation,

and cluster the errors by city to further account for the nonindependence of residuals.<sup>12</sup>

## Diversity Leads to Fewer Bond Proposals

We begin by offering findings similar to those in the broader literature. Table 1 reveals that in cities with higher levels of racial and ethnic diversity, elites propose fewer bonds. The first column shows the result of regressing *Anybond* on *Diversity*, *Inequality*,

<sup>12</sup>Not all cities are required to hold referenda elections for the issuance of general obligation debt. We coded state laws using data generously provided by Jeff Tessin. Our cities fall into one of four categories: never required to hold referenda, always required to hold referenda, local option to hold referenda, and sometimes required to hold referenda. The last category refers to states laws that require referenda for issuances of a certain size or for a certain expenditure target (like sewers). We account for this variation in our models by including state fixed effects and excluding cities in states that are never required to hold referenda. Including the states that are not required to hold referenda does not change our results.

<sup>&</sup>lt;sup>11</sup>These data are from the 1987 Census of Governments, Organization file. Later Censuses of Governments did not include this question so we are forced to use the 1987 data. The variable includes data on 12 types of services: airports, water supply, electric utility, gas supply, hospitals, landfills, libraries, nursing homes, public transit, sewer system, stadiums/convention centers, and fire protection. Three other institutional variables also come from this same source—form of government, type of council election, and home rule status. Running the models without these variables produces results very similar to those presented.

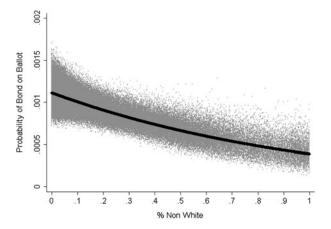
and *Population* without additional controls or state fixed effects. The second column adds all of the control variables discussed above as well as state fixed effects. Both regressions are probit models.

The results reveal a powerful negative effect of diversity on the probability of elites presenting bond proposals to voters. Many, although not all, of the control variables perform as anticipated. Like diversity, inequality reduces the probability of proposal perhaps because of a disutility among wealthier residents for funding public goods that will be accessed by the poor. On the other hand, column two of Table 1 indicates that a substantial proportion of the variance in proposal rates is associated with need for borrowing and capacity for repayment. Elites place more bonds on the ballot in larger cities, when they face revenue shortfalls, when the city provides a greater number of services, and when local income levels are higher. Additional intergovernmental revenue is negatively related to bond proposal.

More importantly, although controls and state fixed effects reduce the strength of diversity, the result remains substantively large and statistically significant. Using the full model for prediction we find that holding all other variables constant at their mean values, comparing a city with a racial split of 99% white and 1% minority to one that is 50% white and 50% minority decreases the probability of any bond being on the ballot in a given year by about 40% (from 0.10% to 0.06%). To show this pattern graphically (as well as the uncertainty around our estimates), we simulated parameters using the model in the second column of Table 1. We did this by drawing 207,488 values of each parameter from a multivariate normal distribution with a mean equal to the vector of point estimates of the coefficients and a variance equal to the variancecovariance matrix of the model. We then calculated the probability of bond proposal using these simulated parameters for each value of percent nonwhite in our data set, holding all other variables constant at their mean values. The results are shown in Figure 1. The solid line represents the probability of proposal using the coefficient point estimates for the calculation.

We take these results as strong evidence that public opinion tends toward opposition of public goods investment in diverse communities. Yet, if political elites were certain to face defeat, diverse communities would be very unlikely to see any bond elections at all—and as the figure reveals, this is clearly not the empirical reality.

FIGURE 1 Predicted Probability of a City Having a Bond on the Ballot in Any Given Year, 1991–2006



*Note:* Estimates generated using simulated parameters from model presented in column 2, Table 1. Actual values of percent nonwhite used and all other variables held constant at mean values

# **Diversity Increases Bond Passage Rates**

Given that diverse communities are likely to see fewer bonds on the ballot, how are they able to invest in public goods? We argue that political elites play an essential role in generating collective action. Wary of putting bonds on the ballot for fear that the bond will be defeated (and therefore a waste of resources and political capital), elites should be attentive to designing and submitting bonds that have a high probability of passage in diverse cities. This means that they build more diverse bond packages in an attempt to garner the support of a broad base of constituents and strategically time the referenda to take advantage of other issues or candidates on the ballot. We find that diverse cities tend to offer voters larger bonds with more categories of spending and are more likely to hold referenda during general elections. Then we show that diverse cities pass bonds at higher rates. Together these findings indicate that elites in racially and ethnically diverse cities act strategically to ensure support for public goods investment.

In Table 2 we analyze how bond packages differ in diverse and homogenous cities, conditional on the presence of a bond referendum. First, we estimate a probit model where the dependent variable is a dummy variable noting whether or not the city proposed bonds with *Multiple expenditure categories* 

TABLE 2	<b>Effect of Diversity</b>	v on Bond	Characteristics	1991–2006

	Multiple Categories Probit Regression		Amount Proposed/ Cap OLS Regression		General Election OLS Regression		Passage Rate OLS Regression	
	Coefficient	St. Err	Coefficient	St. Err	Coefficient	St. Err	Coefficient	St. Err
Diversity	0.580**	0.282	0.672**	0.265	0.322**	0.101	0.235**	0.111
Inequality Log	0.053	0.454	-0.965**	0.368	-0.449**	0.168	0.166	0.145
Population Log	0.080**	0.036	-0.340**	0.038	0.010	0.011	$-0.020^{\dagger}$	0.013
1 yr Change Population (thsds)	0.010	0.010	0.022**	0.011	0.000	0.005	0.004**	0.002
% College Degree	1.888**	0.750	0.511	0.671	0.219	0.258	0.980**	0.244
Taxes Per Cap	-0.025	0.088	0.258**	0.103	0.023	0.037	0.050*	0.026
Income Per Cap (thsds)	$-0.012^{\dagger}$	0.008	0.008	0.009	0.000	0.003	$\text{-}0.004^{\dagger}$	0.003
Median Home Value (10 thsds)	0.006	0.008	0.003	0.007	0.006**	0.003	-0.003	0.003
Council Manager	-0.057	0.083	-0.056	0.077	-0.024	0.028	-0.058*	0.031
Revenue Shortfall (mill)	$-0.169^{\dagger}$	0.110	0.156**	0.051	0.039	0.041	-0.011	0.023
Average Debt Cost	-0.500	0.391	0.039	0.041	0.027**	0.008	0.013	0.011
% Revenue Intergovernmental	$0.598^{\dagger}$	0.380	0.110	0.419	0.234*	0.129	-0.036	0.130
Home Rule	0.064	0.101	-0.042	0.090	0.017	0.032	$\text{-}0.044^{\dagger}$	0.034
Total Services	-0.012	0.024	-0.022	0.022	0.005	0.009	0.009	0.008
District Council	0.142*	0.085	-0.094	0.082	0.002	0.029	0.017	0.031
Constant	-1.538**	0.397	8.329**	0.511	0.608**	0.138	0.681**	0.149
N	1,305		1,305		1,308		1308	
$R^2$	0.103		0.294		0.283		0.130	

Note:  $\dagger p < .10$  one-tailed,  $\ast p < 0.10$ ,  $\ast \ast p < 0.05$ ; State fixed effects included but not presented, Robust standard errors clustered by city

in a particular year. 13 This variable is coded 1 if the number of categories proposed exceeded the number of bonds proposed in a given year. If elites build larger coalitions to encourage support of collective goods, diversity should have a positive effect on this measure. It should also positively affect the size of bond packages as politicians try to win support from more groups. We measure this by regressing the natural log of the per capita Amount Proposed on diversity. Then we estimate the effect of diversity on the likelihood that the referenda are held during General elections, which tend to witness higher and more representative turnout than primaries or nonconcurrent elections. Each bond is given a value equal to 1 if it was on the ballot in the first Tuesday of November. Because some cities hold multiple bond elections in a given year, this variable is an average of concurrency across all of the bonds proposed for a particular city-year. If elites take advantage of differences in the electorate in higher turnout elections, diversity will be positively related to general election

<sup>13</sup>We coded bonds into 19 different categories of spending: development, k-12 education, college education, wastewater, utilities, health, housing, open space, amenities, transportation, infrastructure, public facilities, financing, justice, safety, pensions, voting, various, and other. The online appendix lists the keywords that we used to place bonds into different categories.

timing. Finally, we analyze the effect of diversity on *Bond Passage Rates*, conditional on a bond being proposed.<sup>14</sup> Table 2 presents our analysis.

As predicted, increasing diversity increases the probability of seeing multiple categories in a single bond package, the size of proposed packages, and the chance that the referenda will be placed on the ballot during general elections. The probability of elites

<sup>14</sup>In alternate tests we employ selection models to take into account the strategic behavior of politicians. As instruments we use the variables Council Manager, Revenue Shortfall, Average Debt Cost, Intergovernmental Revenue, District Elections, Home-Rule, and Total Services Operated. The selection equation is identical to the full model presented in Table 1. In order to increase efficiency of the models and ensure convergence, the outcome equations only include state fixed effects that proved to be significant at the p < .10 level in one-tailed tests in the conditional models presented in Table 2. The results are extremely similar to those presented in Table 2. The percent nonwhite coefficient in the multiple categories model is 0.576, in the amount proposed model it is 0.764, in the general election model it is 0.350, and in the passage rate model it is 0.216. All coefficients are significant at the p < 0.05 level. These regressions are available in the online appendix. We also tested models that control for the possibility that communities may be less (or more) likely to pass bonds if they have been presented with bonds in previous years. We added lagged measures noting the presence of any bond on the ballot in the previous year or any of the previous five years. Our conclusions are robust to this specification but because we lose a substantial amount data with the lagged terms we do not present these results.

Processed Per Captus Bond Amount

Proces

Figure 2 Effect of Diversity on Bond Characteristics, 1991–2006

Note: Estimates generated using simulated parameters from model presented in Table 2. Actual values of percent nonwhite used and all other variables held constant at mean values

proposing expenditures in multiple categories is about .37 for highly diverse cities (50% minority) and .27 in homogenous cities (1% minority). Proposed bond packages in diverse cities also tend to be about 40% larger (\$326 compared to \$453 per capita). Approximately 58% of bond elections are held during general elections in highly diverse cities compared to 43% in homogenous cities. Relative to homogenous cities, passage rates increase by about 10 percentage points (from 62% to 74%) in diverse cities. Using the same procedure described above, Figure 2 graphically displays the effect of diversity on these bond characteristics.

# Diversity's Effect on Overall Indebtedness

If it is the case that elites act strategically to convince their communities to invest in public goods, then we should find that diversity has no effect on the overall amount of bond debt issued through bond elections. We test this hypothesis by analyzing the Total Debt Approved Per Capita. This variable measures the natural log of the total amount of debt voters approved in a given year for all of the cities in our dataset. It is set equal to zero (after logging the positive values) if no debt was proposed or if no debt was approved; thus it combines information on both submittal and passage. Because of the extremely large number of values equal to 0 for this dependent variable, we analyze the relationship between diversity and approved bond debt using a Tobit model censored at 0. Table 3 shows that diversity has no effect on the overall amount of debt voters approve. The coefficient on diversity is tiny relative to the intercept and with a standard error nearly seven times the size, it is far from statistical significance.

These results reveal that elites are able to overcome the tendency toward lower public investment in diverse cities. While they see fewer bond elections overall, the bonds that diverse cities pass raise more money and pass at higher rates, yielding amounts of voter approved debt that are similar to their homogenous counterparts.

<sup>&</sup>lt;sup>15</sup>Adding a control for the proposed amount of the bond to this analysis does not affect the results.

TABLE 3	Effect of Diversity on Total Per Capita
	Bond Debt Approved, 1991–2006

	Coefficient	St. Err
Diversity	-0.215	1.475
Inequality Log	-7.261**	2.422
Population Log	3.953**	0.174
1 yr Change Population (thsds)	0.073	0.059
% College Degree	21.938**	3.354
Taxes Per Cap	0.121**	0.028
Income Per Cap (thsds)	0.093**	0.044
Median Home Value (10 thsds)	$\text{-}0.065^{\dagger}$	0.041
Council Manager	-0.207	0.578
Revenue Shortfall (mill)	0.556	0.665
Average Debt Cost	0.205**	0.081
% Revenue Intergovern- mental	-4.195**	1.895
Home Rule	0.171	0.517
Total Services	0.352**	0.146
District Council	0.014	0.502
Constant	-76.679**	2.131
$N_{-2}$	207,488	
$R^2$	0.173	

*Note*: †p < .10 one-tailed, \*p < 0.10, \*\*p < 0.05; Tobit regression censored at zero; State fixed effects included but not presented, Robust standard errors clustered by city

### Conclusion

Diversity reduces the propensity for communities to invest in public goods. This is now a well-confirmed finding in many different settings. We advance this literature by exploring the factors that increase the probability of collective action in such communities. We use a new data set of municipal bond elections covering a 16-year period and thousands of cities. We find that racial and ethnic diversity decreases the occurrence of bond elections (as the literature would predict) but that diverse communities can and do overcome the tendency toward low investments. Our results point to the critical role political elites play by balancing divergent preferences and mobilizing voters to support large investments in municipal bonds. Diverse cities generate larger bonds that pass at higher rates. As a result diverse communities issue similar amounts of voter approved debt.

Our results also indirectly shed light on the likely causes of lower public goods provision in racially and ethnically diverse cities. Habyarimana et al. (2007) argue that that the causal link between ethnic fractionalization and the lower provision of public goods is a lack of sanctioning mechanisms for members who fail to contribute to the collective enterprise. Given that the kinds of bonds we study are repaid through compulsory taxation, ineffective sanctioning of noncontributors is unlikely to produce the kinds of effects that we see.

Our data are more consistent with two other explanations of the relationship between diversity and lower provision of public goods—preference divergence and disutility over other groups' consumption. Scholars like Alesina, Bagir, and Easterly (1999) and Boustan (2010) argue that diverse communities are likely to have a greater degree of preference divergence over the right bundle of taxation and services. Diversity may also increase the variance on consumption rates for individual goods. The more "types" of preferences that exist, the less likely it will be that the government's chosen bundle of revenue and expenditure policies will correlate with residents' utility functions. This could lead to greater coordination problems in producing the ideal tax/service bundle (Tiebout 1956). The fact that bonds in diverse cities are more likely to encompass multiple expenditure categories and to entail larger dollar amounts indicates that preference divergence may be one of the factors challenging public good investment in diverse cities. Additionally, a number of scholars have argued that diversity limits public goods investment because a given ethnic group's utility for the good may be reduced when other groups have access to the same good (Alesina, Baqir, and Easterly 1999; Poterba 1997; Vigdor 2004). We explained above that research indicates that this disutility is likely to be strongest among whites who believe that minorities will be the beneficiaries of public policies (Gilens 1996, 1999; Lee and Roemer 2006, Luttmer 2001; Tedin, Matland, and Weiher 2001). As a result, in diverse communities groups prefer to keep taxes low and to devote more of their resources to private rather than public consumption. Hopkins (2009) draws on similar logic to explain his findings that rapidly diversifying towns in Massachusetts were less likely to invest in large capital projects. He suggests that in such settings residents may be more uncertain about staying in the community, making them reluctant to invest in public goods that may not benefit them.

We find that elites in diverse communities are more likely to place bonds on the ballot during general as opposed to nonconcurrent elections. Scholars have provided evidence that this has the effect of changing the demographic characteristics of the median voter. Low turnout, nonconcurrent elections produce electorates that are whiter, wealthier, older, better educated, and have a higher rate of homeownership than electorates in general elections. As a result it is possible that in diverse cities the median beneficiary of public goods will be more dissimilar to the nonconcurrent election median voter than to the general election median voter. Placing bonds on the ballot during general elections may be an attempt to overcome voters' disutility over investing in public goods that are accessed by residents who do not share their racial and socioeconomic characteristics.

While additional research probing the views of residents would necessary to confirm these assertions, our data indicate that both preference divergence and disutility over others' consumption of public goods could drive the negative correlation between diversity and bond elections. The good news for diverse communities is that elites can mediate this tendency by acting strategically: attending to broad coalitions and taking advantage of turnout differentials. As a result, larger shares of bonds representing larger dollar amounts pass in racially and ethnically diverse places and diversity has no negative effect on voter approved bond issuances.

As important as we think this finding is, it continues to be the case that cities vary in their ability to provide their residents with an adequate supply of public goods. Explaining why some cities provide ample public goods and others come up short remains an important task, and we hope that our findings offer scholars insights that will move research forward on this topic.

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Jacob Rugh is a PhD candidate in the Woodrow Wilson School of Public and International Affairs at Princeton University, Princeton, New Jersey, 08544.

Jessica Trounstine is an assistant professor of political science at the University of California, Merced, Merced, California 95343.