

The Provision of Local Public Goods:
Analyzing Municipal Bond Elections

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Abstract: In a variety of settings scholars have shown that diversity depresses public goods expenditures. In US cities, racial and ethnic divisions in particular, have the potential to undermine public investment. However, even very diverse cities produce some public goods. We ask how these communities overcome their collective action problem. 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. We use a new data set on municipal bond elections to provide evidence of this process. We show that diverse cities tend to offer voters larger bonds with more categories of spending and are more likely to hold referenda during general elections. In the end diverse cities pass bonds at higher rates than homogenous cities, and as a result, issue similar amounts of voter approved debt.

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Many United States cities function without regular problems. They have well maintained roads, sewers that never overflow, and public parks with swing sets and restrooms. Their downtowns boast shiny new convention centers and they conserve large tracts of open space in their hinterlands. But others struggle to attract economic development, fail to adequately equip their police and fire forces, and endure overcrowded municipal jails. It is the task of city governments, as it is the task of all governments, to provide public or collective goods for community residents. Scholars across many fields have sought to understand the factors that lead to the provision of such goods in some settings but not others. A significant body of research has shown that generating cooperation can be particularly difficult in diverse communities (Alesina et al 1999; Glaser 2002; Alesina and Spolaore 1997; Easterly and Levine 1997; Poterba 1994, Habyarimana et al 2007, 2009, Miguel and Gugerty 2005, Okten and Osili 2004, Benarjee et al 2005, Putnam 2007, Videras and Bordoni 2006).

In U.S. cities, racial and ethnic diversity in particular, has the potential to weaken investment in public goods. A large literature focused at the national level has shown that race plays an enormously important role in determining political attitudes and policy preferences (Federico and Luks 2005, Dawson 1994, Kinder and Winter 2001, Sears et al 2000, Kinder and Sanders 1996, Kluegel and Smith 1986). Importantly for the debate on public goods, scholars have provided evidence that white voters resist spending money on goods and services when racial and ethnic minorities are believed to be the beneficiaries (Gilens 2009, Luttmer 2001, Sears and Citrin 1985). In cities, where racial and ethnic minorities can make up substantial shares of the population, whites' unwillingness to contribute to public goods might seriously undermine collective goods provision. Indeed, in a seminal piece of research on this topic,

Alesina et al (1999) show that diverse cities allocate smaller shares of their budgets on productive public goods like education, roads, sewers, and trash pickup.

However, Alesina et al (1999) provide no evidence that the *level* of public goods is lower in diverse cities. Regardless of how they fare relative to homogenous cities, even the most diverse cities in the US produce some public goods. So how do they solve their collective action problems? 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 (see for example Frohlich et al 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 and winning election to office requires officials to be especially attentive to coalition building when preferences are divergent (Kaufmann 2004, Tedin et al 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). 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. 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. Thus, political elites perform an important mediating function in the generation of public goods.

Our research indicates that two mechanisms are likely to drive the tendency toward a negative correlation between diversity and public goods provision in the cities we study. The first is that individuals are 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). The second mechanism potentially driving lower investment in diverse cities is 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 et al 1999, Teibout 1954). Our results indicate that both may be important factors in racially and ethnically diverse cities as politicians seek to encourage bond support through higher turnout of nonwhite residents and tend to bundle public goods in communities where preferences are likely to diverge.

The remainder of the paper 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. 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 factors that contribute to the negative relationship between diversity and public goods expenditure.

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 (1971) 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” (p6).

So we begin with the (perhaps obvious) expectation that political leaders will 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 similarly 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.¹ So, if diversity generates disutility over others' consumption of the good and/or preference divergence, it would make no sense for these same voters to approve municipal debt to fund large, public goods 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 voter approved bond issuances as well. As we will show, this contention is not supported by our data.

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

¹ Cities in the United States 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.

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 papers have shown that a larger proportion of nonwhites increases debt costs and/or decreases the likelihood of debt issuance (Moon and Stotsky 1993, Aronson and Marsden 1980). Similarly, 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 what voters will 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 (Trounstine 2010), elected officials need to build broad based coalitions to win elections. These skills might transfer to building policy coalitions as well, making them well equipped to identify strategies that will lead to successful bond passage even in the presence of divergent preferences.

We find that racial and ethnic diversity does depress the likelihood that a city will have a bond election, but it also 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 generation of diverse bond packages. This strategy allows elites to build coalitions of support by ensuring expenditures for a variety of different groups. Instead of presenting voters with a bond to buy a new fire truck, they might offer voters the chance to approve a fire truck bond alongside a bond to build new parks and a bond to repair roads. 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.

Elites in diverse cities should also be more likely to place these bonds on the ballot in general (as opposed to non-concurrent or primary) elections. Compared to general elections, non-concurrent elections produce lower turnout and an electorate that represents a different subset of the population. Lower turnout (e.g. non-concurrent) elections have electorates that are whiter, wealthier, older, and better educated than the city as a whole (Hajnal 2009). 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, Luttmer 2001, Gilens 1996, 1999, Sears and Citrin 1985, Smith 1987). In a survey of voters in a school bond referendum Tedin et al (2001) found that blacks and Latinos were more likely than whites to approve the bond, as were younger voters, and less racist voters. This means that in diverse cities in particular, general elections are more likely to bring voters to the polls who are supportive of public goods investment. In homogenous communities on the other hand, public goods expenditures are less likely to be understood as a benefit to an "out-group" so changing the timing of the election is less likely to shift the preferences of voters regarding 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 some may see this prediction as contradicting other local politics research. For instance, Berry (2009) argues that lower turnout should encourage higher spending (and perhaps more debt issuance) in special districts because people who stand to benefit from the higher spending will make up a larger portion of the electorate. However, both the type of people who comprise the electorate and the type of bonds proposed in special districts could differ in meaningful ways from voters and bonds in cities.

Berry's model is predicated on the assumption that lower turnout special-district elections are more likely to be dominated by the interest group that benefits from that special purpose. But whereas special districts are charged with governing one particular function, this is not the case for cities. So, while Berry's intuition regarding the policy priorities of those who vote in *special district* elections is rational, it is less obvious what the policy priorities of those who turnout in non-concurrent *municipal* elections will be. Existing research indicates that non-concurrent elections may be disproportionately composed of municipal employees and homeowners (Oliver and Ha 2007, Berry and Gerson 2009) but it is not clear that such groups would support bond passage. Indeed, a preference for lower property taxes among homeowners and higher pay for municipal employees could easily depress interest in funding public goods like parks and bridges. Additionally, in cities, bonds are typically not the only item on the ballot regardless of the date of the election. This means that even in non-concurrent elections, bonds may not be the primary motivator for turnout. If it is the case that general elections draw people to the polls who are more likely to support public goods investment (e.g. minority residents and poorer residents), then the expectation of a positive relationship between high turnout and support for public goods investment is sensible.

The effects of logrolling and general election timing should be two-fold. First, the cost of the bonds that are proposed should be higher as elites attempt to win support from more groups. Second, passage rates should increase. As a result diverse cities should approve bond debt at similar rates to homogenous cities. 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 prepared 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).² We extracted complete data for 13,405 bond elections held between 1991 and 2006. 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. 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 can be found in table A1). Figure 1 summarizes the targets of spending for bonds proposed in our data set.

[INSERT FIGURE 1 ABOUT HERE]

² 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.”

Because we want to ensure that our analysis of bonds takes into account the strategic behavior of political elites, it is important that our dataset include cities that did not hold bond elections during our time series. So, 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. Table A2 presents summary statistics and sources for all variables.

In addition to this broad dataset, we also collected precinct level election returns for two bond elections from one of the diverse, large cities in our sample, Kansas City, Missouri. After reading news reports from a number of cases we learned that in Kansas City in 2002 a bond appeared twice – failing first in a primary election and passing three months later in the general. We matched precinct level election data to Census block groups to analyze the relationship between turnout and bond support while holding as many other factors constant as possible.

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 non-white including black (non-Hispanic), Asian (non-Hispanic), Latino, and other (non-Hispanic) residents.³ 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. Local public opinion data suggests this is a reasonable assumption (Trounstine 2010). If bond elections are a good representation of investment 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

³ We also tested our conclusions using a Herfindahl index ($Diversity = 1 - \sum(\text{group}_i)^2$). The results are extremely similar, but we think 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 non-white as our main independent variable.

diversity and inequality is relatively weak ($\text{corr}=0.14$), 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; Simonson, 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*. 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 et al (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 (Baber and Sen

1986, Alesina and Drazen 1991; Poterba 1994; Alt and Lowry 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* (Temple 1994; Clingermayer and Wood 1995; Moon and Stotsky 1993). 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 (Danielson 1976, Boustan 2010).

We also include a number of variables that should be influential for elite decisions with regard to placing bonds on the ballot, but which may be unrelated to voters' choices.⁴ 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 GO 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 (Whalley 2009; Vijayakumar 1995). 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

⁴ In alternate tests we use these variables as instruments in selection models. These estimations are available from the authors.

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.

Finally, we add institutional variables that should affect proposal and perhaps passage. 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.⁵ We add state fixed effects to account for important cultural and legal variation, and cluster the errors by city to account for the strong relationships in patterns over time.⁶

Diversity Leads to Fewer Bonds

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*, and *Population*

⁵ 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.

⁶ 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 that are never required to hold referenda.

without additional controls or state fixed effects. The second column adds all of the control variables discussed above as well as state fixed effects.

[INSERT TABLE 1 ABOUT HERE]

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 Table 1 indicates 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 variance-covariance matrix of the model. We then calculated the probability of bond proposal using these simulated parameters for each value of percent non-white in our data set, holding all

other variables constant at their mean values. The results are shown in Figure 2. The solid line represents the probability of proposal using the coefficient point estimates for the calculation.

[INSERT FIGURE 2 ABOUT HERE]

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.

Diversity Increases Bond Passage Rates

So, given that diverse communities are likely to see fewer bonds on the ballot, how is it that they are 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 of defeat, elites should be more 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 bonds with more categories of spending and are more likely to hold referenda during general elections. As a result diverse cities see larger bond packages that pass at higher rates. Together these findings indicate that elites in racially and ethnically diverse cities act strategically in order to ensure support for public goods investments.

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 in a particular year.⁷ This variable is coded one 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 non-concurrent 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 timing. Finally, we analyze the effect of diversity on *Bond Passage Rates*, conditional on a bond being proposed.⁸ Table 2 presents our analysis.

[INSERT TABLE 2 ABOUT HERE]

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 proposing expenditures in multiple categories is about 37% for highly diverse cities (50% minority) and 27% in homogenous cities (1% minority). 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

⁷ 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. See appendix Table A1 for more detail on the coding.

⁸ In alternate tests we employ selection models to take into account the strategic behavior of politicians. The results are extremely similar to those presented and are available upon request.

during general elections in highly diverse cities compared to 43% in homogenous cities. Compared 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 3 graphically displays the effect of diversity on these bond characteristics.

[INSERT FIGURE 3 ABOUT HERE]

Higher Turnout Correlates with Higher Passage

We argued above that the reason general election placement should increase the probability of passage is that in diverse cities higher turnout elections should have a median voter who is more likely to favor public goods spending. In order to provide evidence in support of this claim we undertook a precinct analysis in Kansas City, Missouri where, in 2002, the same sized bond failed in an August election and then passed in November. In total, the November election saw a turnout of 22% of age eligible voters compared to only 9% in the August primary and as shown in Table 3, the electorate looked very different.

[INSERT TABLE 3 ABOUT HERE]

On average, turnout was nearly 17 percentage points higher in November and the electorate looked significantly more representative of the city as a whole. Compared to the August electorate, the pool of voters in November was made up of fewer whites, more blacks, more young people, fewer homeowners, fewer people with college degrees, and more people with lower incomes. Importantly, higher turnout is significantly related to bond support. To see this we regressed the proportion of *Yes Votes* on *Turnout*, controlling for *Ballot Roll-off* with errors

clustered by precinct.⁹ We find that increasing turnout from 11% to 27% (the average difference between the two elections), increases the expected proportion of votes in support of the bond by 2 percentage points. Given that the difference in support between the two elections totaled 3.3 percentage points, it is possible that the increase in turnout aided passage.¹⁰ In diverse cities passage rates are likely to be higher when the median voter is more similar to the median resident (and when whites make up a smaller share of the electorate).

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 if no debt was proposed or if no debt was approved; thus it combines information on both submittal and passage. Table 4 shows that diversity has no effect on the overall amount of debt voters approve.

[INSERT TABLE 4 ABOUT HERE]

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 to exploring the factors that increase the probability of collective action in such communities using a new data set

⁹ The coefficients are nearly identical when we control for the proportion of the population that is Nonwhite, proportion Over 65, proportion Homeowners, proportion in Poverty, proportion with a College Degree, and Median Household Income.

¹⁰ We think that the remaining increase in support was driven by a change in the promised allocation of the bond funds. In the August version about 65% was slated to go to redevelopment and the remainder to neighborhood projects. In the November version the funds were to be divided more evenly between the two targets and the process was more inclusive of neighborhood representatives. Our data do not allow us to disentangle which factor was more important.

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 overcome the tendency toward low investments. Political elites play a critical role 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 non-contributors is unlikely to produce the kinds of effects that we see.

Our data offer more support for 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 et al (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 et al 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 (Tedin et al 2001, Lee and Roemer 2006, Luttmer 2001, Gilens 1996, 1999). 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 non-concurrent elections. We provide evidence that this has the effect of changing the demographic characteristics of the median voter. Low turnout, non-concurrent 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 non-concurrent 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 socio-economic 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 may be the culprits behind the negative correlation between diversity and municipal bond elections. The good news for diverse communities is that elites 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.

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**Table 1: Effect of Diversity on
Any Bond Being on the Ballot 1991-2006**

| | Without Fixed Effects | | With All Controls/ Fixed Effects | |
|--------------------------------|--------------------------|---------|-------------------------------------|---------|
| | 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) | | | -0.004 † | 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 |
| | <i>N</i> | 207,488 | 207,488 | |
| | <i>R</i> ² | 0.179 | 0.248 | |

Note: †*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

Table 2: Effect of Diversity 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 † | 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 † | 0.008 | 0.008 | 0.009 | 0.000 | 0.003 | -0.004 † | 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 † | 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 † | 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 | -0.044 † | 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 |
| | <i>N</i> 1,305 | | 1,305 | | 1,308 | | 1308 | |
| | <i>R</i> ² 0.103 | | 0.294 | | 0.283 | | 0.130 | |

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

Table 3: Kansas City, MO Electorate Differences

| Precinct Characteristic | Kansas City 2000 Census | August 2002 Primary Election | November 2002 General Election | Test: Mean _{NOV} – Mean _{AUG} = 0 |
|------------------------------------|----------------------------|---------------------------------------|---|---|
| | Mean | Mean | Mean | t- statistic |
| VAP Turnout (un-weighted) | | 10.7% | 27.4% | 11.39** |
| % Support of Bond | | 58.3% | 61.2% | 2.84** |
| % White (Age 18+) | 61.9% | 60.6% | 53.3% | -2.15** |
| % Black (Age 18+) | 28.0% | 30.4% | 38.1% | 2.20** |
| % Hispanic (Age 18+) | 6.1% | 5.4% | 5.2% | -0.18 |
| % Asian (Age 18+) | 1.9% | 1.7% | 1.5% | -0.86 |
| % Age 65+ | 11.7% | 14.6% | 13.7% | -1.09 |
| % Homeowner | 57.7% | 63.1% | 60.0% | -1.23† |
| % College Degree (Age 25+) | 25.7% | 29.1% | 26.3% | -1.39† |
| % Individuals in Poverty | 14.3% | 13.1% | 15.0% | 1.69* |
| Median HH Income (\$) | 37,198 | 42,542 | 39,273 | -1.63† |
| Roll-off: 1 – (Total/Ballots Cast) | | 8.2% | 11.5% | 5.07** |

N=373. Bonds are required to pass by 57% in Kansas City; in August 56% voted in favor of the bond, 60% approved in November.

†p<0.10 (one-tailed test) *p<0.10 **p<0.05 Note: Precinct data are constructed from 2000 Census Summary File 1 and 3 block group data aggregated to the voting precinct level merged with election returns; mean characteristics are weighted by VAP turnout (ballots cast divided by voting age population). Jackson County (181 precincts) and Platte County (10 precincts) data for Kansas City are at the precinct-level and Clay County (27 precincts) data are collapsed to a single observation due to unavailability of August precinct-level returns; Cass County (1 precinct) returns are not included.

**Table 4: Effect of Diversity on
Total Per Capita Bond Debt Approved, 1991-2006**

| | Coefficient | St. Err |
|--------------------------------|-----------------------------|---------|
| Diversity | -0.004 | 0.005 |
| Inequality Log | -0.012 * | 0.007 |
| Population Log | 0.016 ** | 0.002 |
| 1 yr Change Population (thsds) | 0.000 ** | 0.000 |
| % College Degree | 0.121 ** | 0.024 |
| Taxes Per Cap | 0.001 ** | 0.000 |
| Income Per Cap (thsds) | 0.000 ** | 0.000 |
| Median Home Value (10 thsds) | 0.000 | 0.000 |
| Council Manager | 0.013 ** | 0.006 |
| Revenue Shortfall (mill) | 0.000 ** | 0.000 |
| Average Debt Cost | 0.001 | 0.001 |
| % Revenue Intergovernmental | 0.018 ** | 0.005 |
| Home Rule | 0.016 ** | 0.004 |
| Total Services | 0.001 | 0.001 |
| District Council | -0.001 | 0.003 |
| Constant | -0.146 ** | 0.039 |
| | <i>N</i> 207,488 | |
| | <i>R</i> ² 0.023 | |

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

Figure 1: GO Bond Targets: 1991-2006

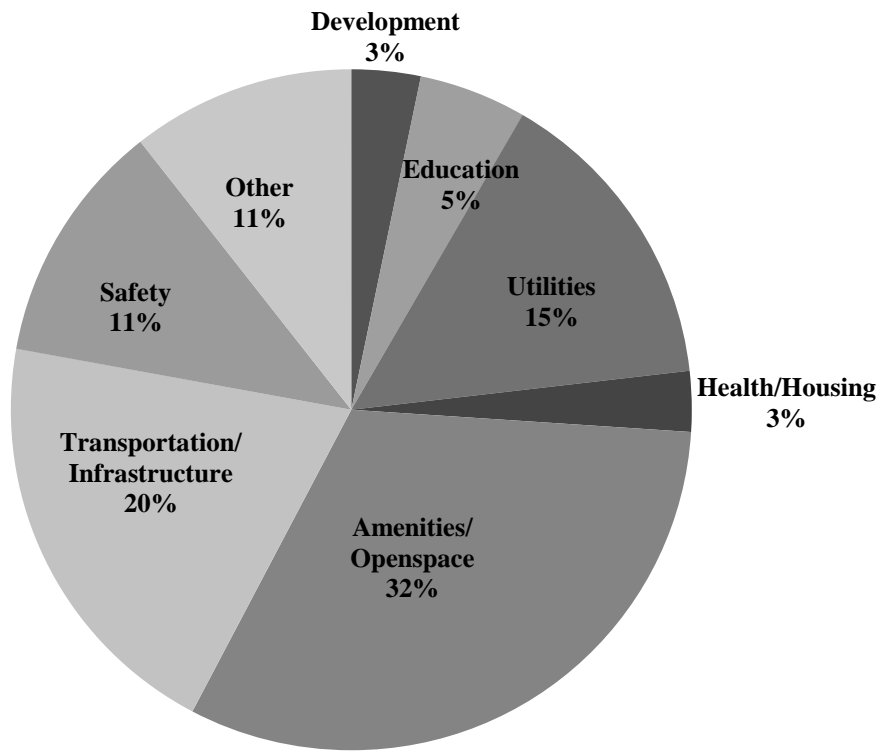
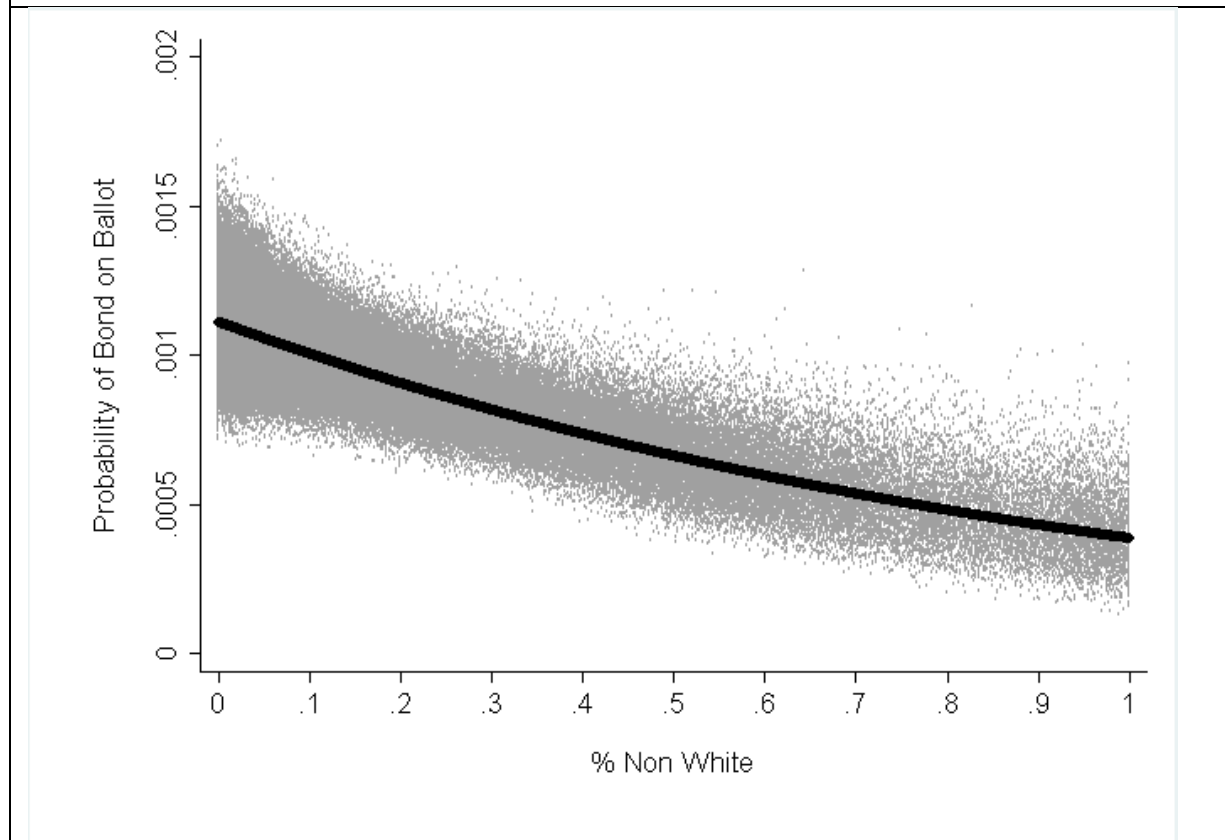
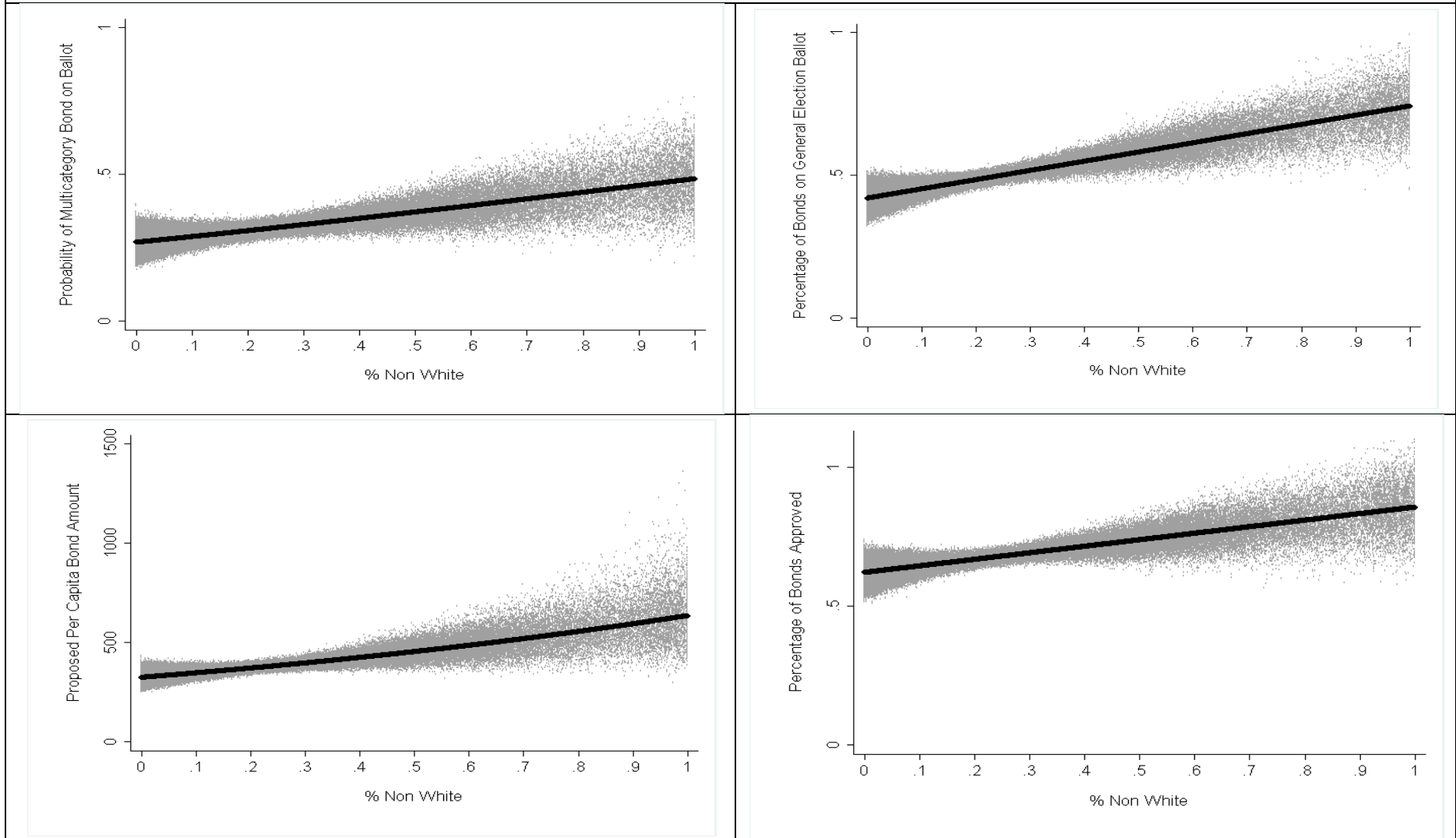


Figure 2: Predicted Probability of a City Having a Bond on the Ballot in Any Given Year, 1991-2006



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

Figure 3: Effect of Diversity on Bond Characteristics, 1991-2006



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

Table A1: Bond Data Keywords and Categories

| | |
|---|--|
| Education | College, campus, education, university, tuition |
| Amenities | Trail, swim, pool, rec, recreation, library, park, shelter, sport, aqua, community, soccer, fairground, museum, cultural, senior, golf, civic auditorium, art, exposition, complex, path, tennis, casino, hall, skateboard, gym, zoo, theatre, theater, stadium, field, science, rink, sidewalk, walk, fair, book, animal, multipurpose, arena, convention, heritage, mosquito, plaza, natatorium, coliseum, ball field, youth, planetarium, aviary, greenway, athletic, childhood, dome, activity |
| Open Space | Preservation, wild, conservation, farmland, forest, green space, wetland, preserve, open/green space |
| Healthcare | Health, hospital, medical, medic, ambulance, care, nurse, psych, embryonic |
| Housing | House, apartment, affordable, Section 8, home, neighborhood, mortgage |
| Development | Economic, development, capital, industrial, commercial, downtown, invest, tif, redevelopment, revival, brownfield, real estate, urban, renewal, firm, manufacture |
| Public Facilities | Municipal, government, administ, town/city, hall, public facility |
| Justice (courthouses, jails, etc.) | Justice, correction, court, jail, prison, detention, juvenile |
| Safety | Fire, police, sheriff, safety, earthquake, ladder, law enforcement, defense, emergency, disaster, relief, warning, crime |
| Infrastructure | Infrastructure, public works |
| Transportation | Transit, transport, train, rail, bus, street, dredge, deepen, highway, parkway, freeway, tollway, bridge, port, asphalt, thoroughfare, parking, paving, ship, road, traffic, signal, airport, seaport, bicycle, dock, wharf, terminal, overpass, viaduct, route, lane |
| Utilities (except water) | Electric, power, utility, energy, generation, transmission, gas, tele, technology, computer, hydroelectric, radio, communication |
| Water & Waste | Water, sewer, sewage, treatment, waste, recycle, landfill, reservoir, wells, flood, drain, refuse, runoff, pipeline, dam, dispose, sludge, levee, filtration, erosion, pump, storm water, pollution, cleanup |
| Refinancing | Debt, outstanding, refinance, refund, grant, bond, repay, repurchase, payoff |
| Pensions | Pension, retire |
| Voting & Elections | Voting, election |
| Various | Various |
| Other | <i>[No keywords found]</i> |

Table A2: Summary Statistics

| Variable | Obs | Mean | Std. Dev | Min | Max | |
|----------------------------------|--------|----------|----------|----------|----------|--|
| Any Bond on Ballot | 207488 | 0.006304 | 0.079147 | 0 | 1 | Bond Buyer |
| % Bonds Approved | 1308 | 0.673673 | 0.454062 | 0 | 1 | Bond Buyer |
| General Election Average | 1308 | 0.492514 | 0.496098 | 0 | 1 | Bond Buyer |
| Multiple Categories Per Bond | 1305 | 0.3341 | 0.471856 | 0 | 1 | Bond Buyer |
| Amount per Cap (log) | 1305 | 5.93232 | 1.233721 | -3.38066 | 13.16213 | Bond Buyer |
| Diversity | 207488 | 0.168459 | 0.223581 | 0 | 1 | Census of Population and Housing & American Community Survey |
| Inequality (log) | 207488 | 0.218393 | 0.142083 | -2.02046 | 2.758669 | Census of Population and Housing & American Community Survey |
| Population (log) | 207488 | 7.278517 | 1.796422 | 0 | 15.15951 | Census of Population and Housing & Current Population Survey |
| 1 year change in population | 207488 | 119.7407 | 1047.543 | -243528 | 93059 | Census of Population and Housing & Current Population Survey |
| % College Degree | 207488 | 0.102867 | 0.08562 | 0 | 1 | Census of Population and Housing & American Community Survey |
| Taxes per Capita | 207488 | 0.303862 | 2.108182 | 0 | 297.4445 | Census of Governments Finance |
| Income per capita | 207488 | 17155.82 | 9177.42 | 0 | 216399.4 | Census of Population and Housing & American Community Survey |
| Median home values | 207488 | 81961.13 | 84886.18 | 0 | 1689800 | Census of Population and Housing & American Community Survey |
| Council Manager government | 207488 | 0.154891 | 0.361802 | 0 | 1 | Census of Governments Organization |
| Revenue Shortfall | 207488 | 530.0772 | 35260.92 | -1310624 | 6842180 | Census of Governments Finance |
| Average Debt Cost | 207488 | 0.069673 | 0.739951 | -9.70588 | 107.2 | Census of Governments Finance |
| % Revenue from Intergov. Sources | 207488 | 0.234324 | 0.204099 | 0 | 1 | Census of Governments Finance |
| Home Rule | 207488 | 0.199428 | 0.399572 | 0 | 1 | Census of Governments Organization |
| Public Services Operated | 207488 | 2.646158 | 1.843681 | 0 | 10 | Census of Governments Organization |
| District City Council | 207488 | 0.200614 | 0.400461 | 0 | 1 | Census of Governments Organization |