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Sustainable Funding for the Arts: What Can Atlanta Learn from the Detroit Experience?



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Prepared for
Research Atlanta

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June 2004

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Acknowledgments

Georgia State University graduate student Wenbin Xiao provided excellent assistance on the research for this project. The author is also grateful for the detailed comments and suggestions of Greg Lewis and Christine Martell.

Introduction

In 2003 Atlantans began a conversation about sustainable funding for the arts, and whether there should be some kind of earmarked tax revenues for the arts in the Metro area. A Research Atlanta study looked at some of the options, the experience of other US cities, and the tough questions advocates of sustainable funding would need to address to secure broad public support for such a measure.

The 2003 study noted that in November 2002, voters in Metropolitan Detroit rejected, in a close vote, a proposed increase in property taxes that would have been directed to the arts and other cultural institutions. In this paper we ask what Atlanta can learn from the Detroit vote. In particular, we will use the precinct-level results of the Detroit referendum, matched with Census Tract data, to get some of idea of which voters supported the arts funding and which did not. To our knowledge this is the first detailed empirical examination of voting for arts funding in the US. We will then consider how Atlanta is like, and unlike, Detroit, and what conclusions we might draw from the Detroit experience.

Metropolitan Detroit's Proposal K

Proposal K, the “Metropolitan Arts and Culture Council – Arts, Parks and Kids Millage Proposal,” read in part that the Council “will support nonprofit regional history, science and arts institutions and local arts and recreation programs” within Wayne and Oakland counties. The tax increase of .5 mill (i.e., 50 cents per \$1,000 taxable value, which is one-half of market value) was expected to generate \$46 million in 2003, one-third of which would have been returned to the municipalities where the revenues were generated for the funding of cultural and recreational programs and facilities, and the other two-thirds were earmarked for seventeen major cultural institutions.

Passage of Proposal K required 60 percent approval in Wayne County, which includes the City of Detroit, and 50 percent approval in Oakland County. As Table 1 indicates, the proposal narrowly failed in each county. The referendum took place on the same date as the general election. Table 1 also includes the voting results for governor, which in the state-wide ballot as well as in Oakland and Wayne counties was won by the Democrat. We will investigate a relationship between voting in favor of Proposal K and in voting Democrat for governor later in this study.

A few remarks on the context of the referendum are in order. First, note that most geographers would place *three* counties in Metro Detroit: Wayne, Oakland, and Macomb. Macomb County opted not to take part in the Proposal K initiative, and this may have caused some resentment among voters in Oakland and Wayne counties.¹ In the empirical work below we treat Census Tract 5180 in downtown Detroit as the “cultural center”, but see that the farthest reaches of Holly Township in Oakland County are over 57 miles

¹ One opponent of the Proposal is quoted as saying, “I just don’t think that property owners in two counties should support those cultural institutions visited by people from around the state.” Frank Provenzano, “Proposal K: Sink or Swim,” *Detroit Free Press*, October 7, 2002.

from Tract 5180, while the City of Warren in Macomb County is less than 10 miles from downtown Detroit.

Figure 1: Support for Proposal K by Census Tract

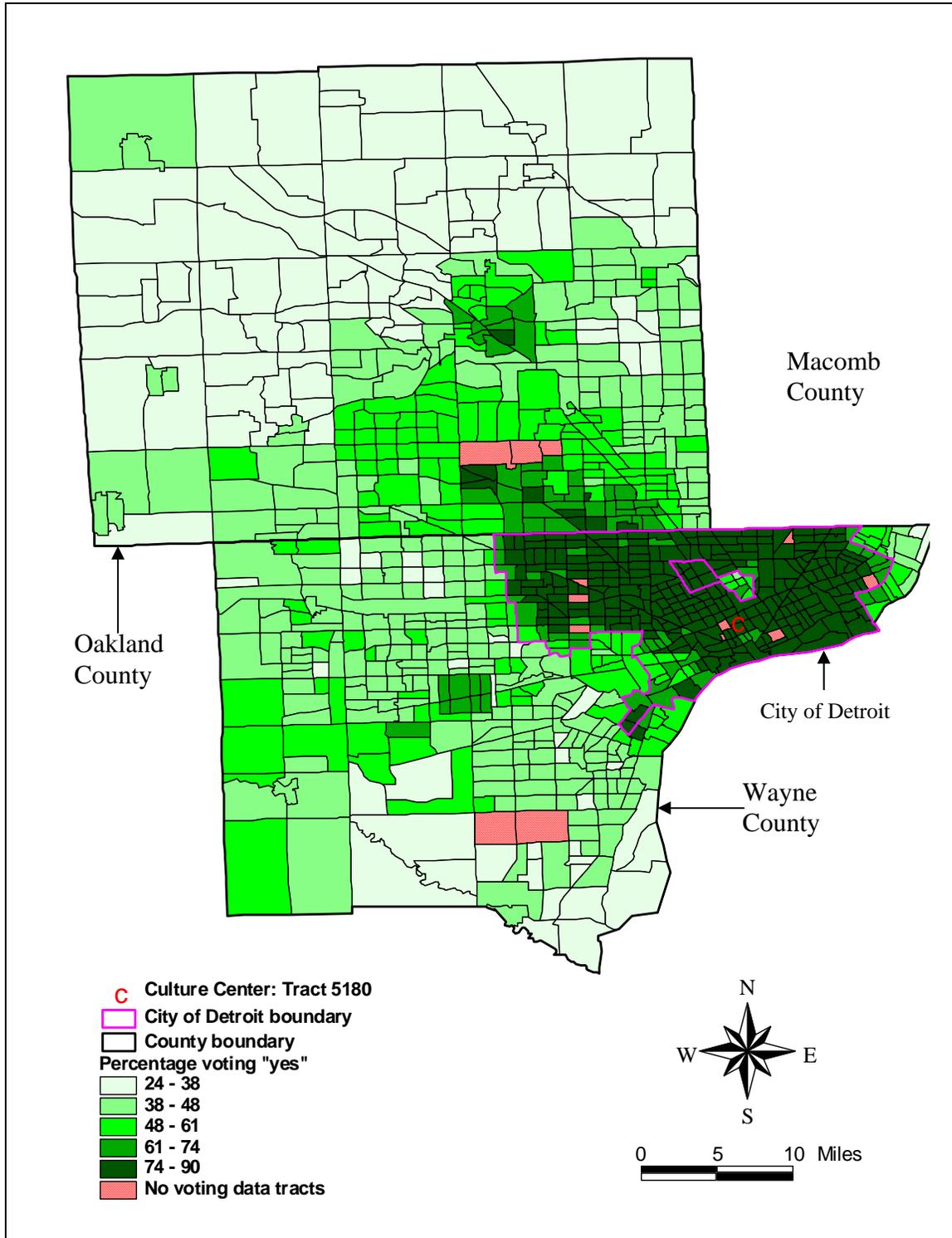


Figure 1 shows the geographic patterns of the vote, applying the precinct-level results to the associated Census Tracts, and provides some sense of the importance of distance from the cultural center and support for Proposal K.²

Table 1
Results of the General Election of November 5, 2002

Vote	Wayne County	Oakland County	Total
% Yes on Proposal K	56.87	46.15	52.18
% Democrat for Governor	67.80	50.52	60.29

A second point to note is that Detroit, once the center of the automobile industry, is a city that now competes in a global marketplace and has suffered economic decline over recent decades. As with many US cities, most recent economic growth has been in the suburbs, and this trend is especially evident in Metro Detroit where suburban Oakland County is one of the richest in the US. “In metropolitan Detroit there is much more reverse commuting from city to suburbs for employment than in most other metropolitan areas.”³

Third, Metropolitan Detroit is highly segregated along racial lines, even where there is comparable socio-economic status.⁴ There is some evidence that racial and ethnic divisions make populations less willing to finance public goods.⁵

A version of a culture tax was defeated in Metro Detroit in the year 2000, and supporters of Proposal K in 2002 saw it as a “last chance” to gain guaranteed, sustained funding for arts organizations. There was no organized campaign against the proposal, but there was a \$3 million advertising campaign in its favor. The local press reported four kinds of

² Where there is overlap between precincts and Census Tracts, we evenly divided the precinct vote across the tracts involved. For a few of the tracts in the two counties there is either no voting data or no households, but in the end a high proportion of tracts were used in the study; of the 951 tracts in the two counties combined we have voting and household data for 929 of them, and this will be our sample for the empirical work later in this study.

³ Reynolds Farley, Sheldon Danzinger, and Harry J. Holzer, *Detroit Divided* (New York: Russell Sage Foundation, 2000) p. 111. *Detroit Divided* is indispensable for understanding the economic and social history of Detroit.

⁴ Ibid., and also Joe T. Darden and Sameh M. Kamel, “Black Residential Segregation in the City and Suburbs of Detroit: Does Socioeconomic Status Matter?” *Journal of Urban Affairs* 22 (2000): 1-13.

⁵ Alberto Alesina, Reza Baqir, and William Easterly, “Public Goods and Ethnic Divisions,” *Quarterly Journal of Economics* 114 (1999): 1243-1284; and for implications for arts funding see Michael Rushton, “Cultural Diversity and Public Funding of the Arts: A View from Cultural Economics,” *Journal of Arts Management, Law, and Society* 33 (2003): 85-97.

objections to the proposal: that it had been previously rejected by voters; that the arts should in general be market driven; that the tax would be levied on some low-income residents who would have neither the time nor the income to visit the cultural institutions; and that the tax would be levied only on residents of two counties when others would be able to benefit.⁶ After the proposal was defeated:

Cultural leaders had no regrets on how the campaign was run. “If we didn’t connect with voters this time, then I don’t know what it’ll take,” said Paul Hillegonds, president of Detroit Renaissance, a nonprofit that promotes development in the city. Steve Hamp, president of Henry Ford Museum & Greenfield Village [which stood to receive \$4 million per year if the Proposal were approved] said tough economic times influenced voters. “We made a compelling case,” he said, “but voters just don’t understand what it takes to fund cultural institutions.”⁷

Explaining the Vote on Proposal K

An Appendix at the end of this study provides the technical details on how we modeled and estimated the determinants of how the residents of Oakland and Wayne Counties voted on Proposal K. The basic idea is to ask how the pattern of the vote across Census Tracts can be explained by the economic and demographic characteristics of the tracts. In this section of the study we discuss what variables were included in the analysis, and which turned out to have significant explanatory power.

Political Leanings

In the US, political liberals are more likely than political conservatives to favor public funding of the arts. Recent surveys show a correlation between support for increased arts funding and being a self-identified political liberal. Arthur Brooks used the 1996 General Social Survey, which asked “Please indicate whether you would like to see more or less government spending on arts and culture. Remember that if you say ‘much more,’ it might require a tax increase to pay for it,” and found that “being a liberal strongly pushes up support for government aid.”⁸

We are fortunate in having a proxy for Proposal K’s voters’ political attitudes, as the general election for state governor was on the same ballot. As Table 1 shows, at least at the county level there is a correlation between support for the Democratic party candidate for governor and support for Proposal K, each being somewhat higher in Wayne County than in Oakland County, although in each case with a higher percentage of voters supporting the Democrat than Proposal K.⁹ More voters cast a vote in the gubernatorial

⁶ “Proposal K: Sink or Swim,” *Detroit Free Press*, October 7, 2002.

⁷ Frank Provenzano, “Arts, Recreation Tax Fails Again,” *Detroit Free Press*, November 6, 2002.

⁸ Arthur C. Brooks, “In Search of True Public Arts Support,” *Public Budgeting and Finance*, forthcoming; this confirms similar results on the question of whether the government spends too much, too little, or just the right amount on the arts analyzed by Brooks in “Who Opposes Government Arts Funding?” *Public Choice* 108 (2001): 355-367.

⁹ The Democrat candidate, Jennifer Granholm, won the statewide election.

contest than in the Proposal K referendum, but the difference in total votes cast is less than 10 percent. As a proxy for “liberal” political views in our regression analysis we used the proportion of the votes for governor that went to the Democrat.

We found that, as expected, the percentage of the electorate that voted for the Democrat Party candidate for governor is a positive and significant predictor of support for Proposal K.

To give some idea of the *magnitude* of the importance of an explanatory variable, we ask the following hypothetical question: Suppose we hold all other variables constant at their average level, and increase the value of the explanatory variable in question by one standard deviation – how do our estimates suggest this would increase the proportion of voters supporting Proposal K? The average across Census Tracts for the Democrat’s share of the vote was 66 percent, with a standard deviation of 22 percentage points. Our estimates suggest that an increase in the Democrat share of the vote by 22 percentage points, other things held equal, increases the support for Proposal K by just over 12 percentage points. This proved to be the highest impact of all the explanatory variables in the study.

Income

We included per capita income as an explanatory variable. We might have expected that, other things equal, a higher income level would lead to more support for the culture tax, since high income individuals are more likely to consume cultural offerings, and have a higher ability to pay the tax. Brooks’ survey of public arts support, however, found that personal income was *not* linked to increased support for public funding, although it was associated with increased private giving to the arts.¹⁰

Our results are consistent with the public opinion data, and indicate that income had an insignificant effect on support for Proposal K.

Property Values

Proposal K is concerned with a property tax increase, and so those who own more valuable homes would face a higher burden. At least to some degree we expect the “homevoter” hypothesis to apply: homeowners considering Proposal K will ask not only how their property tax bill will rise but also how the earmarked expenditures from the proposal might serve to increase property values.¹¹ Having no prior prediction on how the market values of houses will affect voting preferences, we included the median value of owner-occupied homes as an explanatory variable.

¹⁰ Brooks, “In Search of True Public Arts Support.” But also note Brooks, “Who Opposes Government Arts Funding?” which finds that the very highest income earners tend to support more public funding.

¹¹ William A. Fischel, “Homevoters, Municipal Corporate Governance, and the Benefit View of the Property Tax,” *National Tax Journal* 54 (2001): 157-173.

As with per capita income, we found that the median price of owner-occupied housing was statistically insignificant as a predictor of the vote for Proposal K. Although, as we discuss in more detail later, median house prices in Oakland County are just under twice the level of Wayne County, and there is very high variation in property values around the Metro Detroit area, from the very inexpensive housing in the City of Detroit to the wealthy suburbs of Grosse Pointe, these variations were not an important determinant of support for the proposed property tax increase.

Renters

We included as an explanatory variable the proportion of individuals in the Census Tract living in rental accommodation. We cannot know precisely the degree to which property tax increases might be shifted forward to renters, but there is certainly a possibility that renters might see Proposal K as a way to have private and public benefits financed by someone other than themselves.¹²

We found that the proportion of the population that are renters had a statistically significant, positive effect on support for the proposal, lending some credence to the idea that renters expect to obtain more benefits from the cultural spending than they will see in forward shifting of the property tax increase. However, we note that the magnitude of the effect is rather small. Holding other variables constant at their mean value, and increasing the proportion of a tract living in rental accommodation by 23.6 percentage points (a large amount, reflecting one standard deviation), the predicted increase in support for Proposal K is only 1.04 percentage points.

Higher Education

Since most of the funding from the Proposal K tax would have been going to the fine arts, such as the symphony, the opera, and the art institute, as well as history and science museums and public television, we predict that it is the more educated individuals who would have received higher private benefits, and probably would have seen larger public benefits, from the funding. This is a case where higher education is likely to be the critical factor, and so we include as an explanatory variable the proportion of the Census Tract population over the age of 25 that has at least a bachelor's degree.

We find that higher education had a significant, positive effect on support for Proposal K. Across Census Tracts in the two counties the average proportion of over-25's with at least a bachelor's degree was 24 percent, and had a standard deviation of 19 percentage points (higher education levels have a high variance across tracts, with one tract in particular having over 78 percent of those over 25 with at least a bachelor's degree). A

¹² Pamela M. Moomau and Rebecca B. Morton, "Revealed Preferences for Property Taxes: An Empirical Study of Perceived Tax Incidence," *Review of Economics and Statistics* 74 (1992): 176-179, use a modeling technique quite similar to that used in this paper (applying precinct-level voting results and Census data to a logit model of a property tax referendum), and find that renters do perceive some "pass-through" of property tax changes, as renters in their study were in favor of a policy that would have lowered property tax rates on rental properties.

one standard deviation increase in our measure of higher education – i.e., increasing the proportion of those over 25 with a bachelor’s degree from 24 percent to 43 percent, holding all other variables constant – would have led to an increase in the predicted support for Proposal K by 3.42 percentage points.

Seniors, Women, Children at Home

We included some further demographic variables where there was at least a possibility it might affect voting behavior. One was the proportion of the population over the age of 65. Seniors would have more time for enjoying cultural amenities, but on the other hand might find that travel to the cultural institutions becomes increasingly difficult. We also included the proportion of the population that is female; there is little variance in the gender composition of tracts, but we note that Brooks has found that women are more likely than men to support public funding of the arts. Also included is the proportion of households that have children under the age of 18 living at home; we can imagine that parents will want cultural goods to be preserved and available for their children, but also that parents will find that the time they have available to attend cultural events is quite curtailed. In our estimates, however, none of these three demographic variables exhibited a statistically significant effect on the vote for Proposal K.

Race

As we noted above, Detroit is a racially segregated city, and so it makes sense to include the proportion of the population that is black as an explanatory variable. At issue here is whether cultural spending is neutral across racial lines, or whether some cultural institutions tend to have audiences that are predominantly one color or another. Multiculturalism raises challenges for advocates of public funding of the arts, since it could be asked whether there is a public interest in perpetuating cultural separation rather than encouraging cultural activities that bring different cultures together. On the other hand, it can be argued that:

Multiculturalism is the price America is paying for its inability or unwillingness to incorporate into its society African-Americans, in the same way and to the same degree it has incorporated so many groups.¹³

Our estimates find that the proportion of a Census Tract that is black had a significant, positive effect on support for Proposal K, with a one-standard deviation increase in the proportion that is black (an increase of 40.11 percentage points; note how such a high standard deviation indicates racial segregation) increasing the “yes” vote by 4.08 percentage points. Again we have a result that is consistent with opinion survey results.¹⁴ However, this is a case where we should be wary of comparing national statistics to the Detroit vote, since we would expect that each metropolitan area in the US would have its

¹³ Nathan Glazer, *We Are All Multiculturalists Now* (Cambridge, MA: Harvard University Press, 1997) p. 147

¹⁴ Brooks, “In Search of True Public Arts Support.”

own, specific history and cultural practices regarding the arts and culture and minority groups.

Distance

For our final set of explanatory variables we asked how easy it would be for residents to make their way to the cultural center of Detroit. The first variable is the proportion of Census Tract residents having access to a vehicle. Second, we include as an explanatory variable the distance from Census Tract 5180, which we designated the cultural center of Detroit. This is the area bounded by Woodward on the west, I-94 on the north, I-75 on the east, and Warren on the south. Wayne State University is to Tract 5180's immediate west. Of course not all of the seventeen major institutions that would have been guaranteed funding are in that one tract. However, the Detroit Institute of the Arts, the Museum of African American History, and the Detroit Science Center are within 5180, and the Detroit Historical Museums, the Detroit Symphony, the Michigan Opera Theater, and the Music Hall Center are all close to Tract 5180. Many of the buildings housing these institutions were built along Woodward Avenue during the 1920's, when Detroit was such a prosperous city. During that time, "the stretch of Woodward from the Hudson Department Store to the General Motors Building that anchored the New Center area became one of the nation's cultural capitals."¹⁵

One initially surprising result is that having access to a vehicle has a significant and negative effect on support for Proposal K. We do not have enough detail in the data to know much about the characteristics of those with access to a vehicle, except to say that in terms of correlation with our other variables there is a significant positive correlation with higher education and distance from the cultural center, and a significant negative correlation with voting "yes" on Proposal K, voting Democrat for governor, being black, and being a renter.

As we might have predicted, there is a significant negative relationship between distance from the cultural center, Census Tract 5180, and voting "yes", although note that the impact is not great, with a one-standard deviation increase in distance (about 11 miles) decreasing the "yes" vote by only 1.8 percentage points.

Summing Up the Results

Our estimates suggest that the person most likely to vote "yes" on proposal K was a black person, renting accommodation close to the city's cultural center, holding at least a bachelor's degree, without access to a vehicle, and likely to vote Democrat. Income, the value of owner-occupied housing, and whether the individual was female, over 65, or had children still living at home, did not appear to have a significant pattern on how people voted.

While we do not know of any other study about referendum voting on arts taxes from the US, there has been some research done in Switzerland, and it is interesting to compare

¹⁵ Farley, Danzinger, and Holzer, *Detroit Divided*, p. 26.

results. Schulze and Ursprung use the same techniques employed in this paper to analyze a 1994 referendum on support for the Zürich Opera House.¹⁶ They also found a significant positive effect of education and a significant negative effect of distance from the city center. Schulze and Ursprung find that income has a significant positive effect on support for the Opera House; we might explain the lack of strong correlation in our paper by noting that Detroit's Proposal K would also have provided support for many cultural amenities that are not priced out of reach of the average voter, while opera tends to be one of the most expensive of the arts to attend. Like this paper they did not find any statistical significance with the proportion of voters being aged over 65.

Detroit and Atlanta

Table 2 provides data from the 2000 Census on the variables used in the study of Proposal K, for the Metro Detroit counties that took part in the proposal and the five core counties of Metro Atlanta.

The total populations of the two metropolitan areas are about the same, with Oakland and Wayne counties having a combined population of 3,255,318 and the five Metro Atlanta counties having a combined population of 2,914,587. As we noted above, however, Metro Detroit should also include Macomb County, but it did not take part in the referendum.

Some highlights of the differences revealed by the 2000 Census data are:

- Income and owner-occupied housing values are much higher in Oakland County than in Wayne County. The differences between counties are not so stark in Metro Atlanta. For example, Oakland County has higher per capita income and a higher median value of owner-occupied housing than any Metro Atlanta county, and Wayne County has a lower per capita income than any Metro Atlanta county, and a lower median housing value than every Metro Atlanta county except Clayton.
- There is a different pattern to income and house prices in Metro Detroit and Metro Atlanta. In Metro Atlanta, Fulton County, which contains the cultural center of Metro Atlanta, has the highest income levels and housing prices. In Metro Detroit, on the other hand, it is suburban Oakland County that has, by far, the higher income levels and housing prices.
- Metro Atlanta has a higher proportion of the population living in rental accommodation than we find in Metro Detroit.

¹⁶ Günther G. Schulze and Heinrich W. Ursprung, "La donna e mobile – or is she? Voter Preferences and Public Support for the Performing Arts," *Public Choice* 102 (2000): 131-149.

Table 2
Year 2000 Census Comparison of Metro Detroit and Metro Atlanta

	Oakland	Wayne	Clayton	Cobb	DeKalb	Fulton	Gwinnett
2000 population	1,194,156	2,061,162	236,517	607,751	665,865	816,006	588,448
Per capita income	32,534	20,058	21,154	27,863	23,968	30,003	25,006
Median value owner-occupied housing	181,200	99,400	92,700	147,600	135,100	180,700	142,100
% in rental housing	24.2	31.0	37.5	30.5	39.6	44.2	26.6
% over age 65	11.3	12.1	5.8	6.9	8.0	8.5	5.3
% with own children under age 18 at home	32.4	32.8	40.7	35.8	31.0	28.7	42.3
% female	51.0	52.0	51.6	50.5	51.6	50.9	49.6
% black	10.0	42.0	51.6	18.8	54.2	44.6	13.3
% over age 25 with at least bachelor's degree	38.2	17.2	24.3	39.8	36.3	41.4	34.1
% with access to a vehicle	94.6	86.2	94.5	96.2	90.1	84.8	96.9

- The two Metropolitan regions are similar in having a higher proportion of blacks living near the urban center than in the suburbs, with Oakland County, being 10 percent black, similar to the lower black populations in Cobb and Gwinnett counties.
- Wayne County stands out as an outlier in terms of a low proportion – just 17.2 percent - of the population over the age of 25 having at least a bachelor’s degree. In Metro Atlanta only Clayton County has a proportion that is less than 30 percent, and at 24.3 percent is still significantly higher than Wayne County. Oakland County’s rate of 38.2 percent is in the range of the other four Metro Atlanta counties.
- The two Metro areas are similar in that there is a lower rate of access to vehicles in the central urban county, as we might expect, with suburban counties in each of the regions having over 90 percent of the population having access to a vehicle.

Lessons for Atlanta from the Detroit Results

No two metropolitan areas are alike in terms of culture or politics, and so we should take care to be modest in any attempt to apply results of a study of one city to another. With that caveat in mind, what do our results tentatively indicate?

- The Detroit results suggested that distance from the cultural center mattered. In neither metro area do we find *all* important cultural institutions in one place, but there are still recognizable cultural centers in Detroit and midtown Atlanta. As we noted above, in the Detroit referendum there were voters in Oakland County as far away as 57 miles from the cultural center. Metro Atlanta, at least when defined by the five-county area, is not so spread out; the outer parts of Gwinnett county are about 35 miles from midtown Atlanta. Since we found in our empirical study of the Detroit referendum that distance from the cultural center has a statistically significant negative impact on support for the arts funding proposal, this might indicate a higher possibility of support for arts funding in Metro Atlanta.
- Our analysis of the Detroit referendum found that having at least a bachelor’s degree had a significant, positive effect on support for arts funding. Since by this measure Metro Atlanta scores higher than Metro Detroit, this could also indicate a higher potential for support for arts funding in Metro Atlanta.
- In the Detroit referendum blacks were more likely to support the arts funding proposal. Given that Clayton, DeKalb, and Fulton counties all have a higher proportion of the population that is black than Wayne County, and that Cobb and Gwinnett counties have a higher proportion of the population that is black than Oakland County, on the surface we might think this would favor greater support for arts funding in Metro Atlanta than Metro Detroit. However, it is probably unwise to jump to any conclusions on this point. We expect racial differences in voting on arts funding to result from perceptions of how the cultural institutions that would receive the funding appeal to different groups. This will be very specific to the individual cases. We don’t have data on the attendance by

different groups at the major cultural institutions in the two cities, but this will surely be an important consideration.

- We found in the Detroit referendum that renters were more in support of the arts funding proposal. Since Metro Atlanta generally has a higher proportion of the population living in rental accommodation than we find in Metro Detroit, would that lead to greater support for arts funding in Metro Atlanta? It is worth keeping in mind here that Metro Detroit's Proposal K was for an increase in the property tax. As we noted in our earlier Research Atlanta study, using a portion of the retail sales tax, or of the hotel/motel occupancy tax, to generate earmarked funds for the arts is actually more common across US cities that have adopted earmarked funding than the property tax; St. Louis is the only major metropolitan area with a property tax for the arts, and those funds are directed to just five cultural institutions. So while the evidence suggests that in Metro Detroit renters tended to favor a property tax increase for the arts, there is no reason to think they would feel the same way about a sales tax increase, for example.
- Although we have only anecdotal evidence on this point, it was reported in the local Detroit press that some voters were against Proposal K because there would be some Michigan residents who would benefit from the cultural institutions without being part of the tax base providing the funding. As we noted above, this problem is highlighted by the nearness of Macomb County to Detroit's cultural center, where residents of Macomb would have had no tax increase. A lesson that might be drawn here is that consideration needs to be given to what residents would benefit from increased cultural funding in Metro Atlanta. If there is the perception that some residents would be getting a "free ride," this could lower support for a cultural funding initiative.
- Finally, in our analysis of the Detroit referendum we found that the strongest predictor of how people would vote on Proposal K was how they voted for Governor, with those voting for the Democrat much more likely to support the cultural funding initiative. What can we learn from this? On the one hand we have confirmation of what has been found in public opinion surveys, or even a casual reading of press clippings since the founding of the National Endowment for the Arts in the 1960's: in the US political liberals are more in favor of public funding for the arts than political conservatives. This is the result of a general preference among conservatives for less government spending, and also a sense among many conservatives that the art that gets public funding is often of questionable moral and/or aesthetic merit. This does not mean there is never support for public funding of the arts by conservatives; we have recently seen support for the National Endowment for the Arts from conservatives as it has embarked upon less funding of new artists and more funding of the presentation of "classic" fine art.¹⁷ On the other hand, we must be cautious in how we apply the Detroit results to Metro Atlanta. Voters self-identifying as "conservative" or "liberal" in Georgia may have a different division of views on public policy issues than conservatives and liberals in

¹⁷ See, for example, "Notes and Comments" *The New Criterion* 22(4) (December 2003): 1-2, or William Safire, "A Gioia to Behold" *New York Times* (March 8, 2004): A25.

Michigan, and the policy positions of Republican and Democratic candidates for governor are also likely to differ somewhat in the two states.

A Final Word

In the Research Atlanta study from 2003 where we considered different options for sustainable funding for the arts, we strongly emphasized the point that public funding must have a clear rationale in terms of public good. Voters are unlikely to support a proposal for arts funding where the goals of the program are not clearly stated and understood. We also made clear that there are a variety of possible goals, each of which has different implications for the design of a new funding mechanism. Proposal K in Metro Detroit had the bulk of the funding going to seventeen major cultural institutions, with the remainder of the funds being returned to the local communities where the additional property taxes were raised. Such a scheme might be good for Detroit (although not enough voters thought so), but not necessarily the best for Metro Atlanta. And so we raise another reminder that a vision of what a sustainable funding initiative could create is a necessary precondition for approval by voters.

Appendix: Modeling the Voting Decision

The estimation in this paper uses voting results by Census Tract; we do not have information on how specific individuals voted. But we still require some model of individual choice, which we will then relate to the grouped data at hand.

We use what has become a standard technique for modeling voting behavior.¹⁸ Let P_i be the probability that individual voter i will vote “yes” in the referendum. Let X_i be a vector of voter i 's relevant economic and demographic characteristics, and suppose the probability of a “yes” vote can be described by a cumulative logistic probability function, where:

$$P_i = 1 / [1 + e^{-(a + bX_i)}],$$

and a and b are parameters. Pindyck and Rubinfeld provide a useful table that helps illustrate the shape of the function: if $(a + bX_i) = -3.0$, P_i will be just under 5 percent, if $(a + bX_i) = 0$, P_i will equal 50 percent, and if $(a + bX_i) = +3.0$, P_i will be just over 95 percent.¹⁹ The idea of this model is that individuals have some threshold value such that when $(a + bX_i)$ exceeds that threshold the individual votes “yes.” With voting behavior following this pattern, there will be a linear relationship between the “log of the odds” of voting yes and the vector of characteristics, and this *logit* model will ultimately form the basis for regression analysis:

$$\log (P_i / (1 - P_i)) = a + bX_i.$$

¹⁸ Although versions of the technique are found in many econometric textbooks, we rely especially on Robert S. Pindyck and Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts*, 4th edition (New York: Irwin McGraw-Hill, 1998) Chapter 11. Also see Damodar N. Gujarati, *Basic Econometrics*, 3rd edition (New York: McGraw-Hill, 1995) Chapter 16.

¹⁹ Pindyck and Rubinfeld, p. 308.

Finally, we assume that the parameters of the model can be estimated by supposing P_i can be approximated by the proportion of voters in the Census Tract who actually voted “yes”, and that X_i can likewise be approximated by group-level data.

The regression is of the log of the odds of voting yes in the referendum as a linear function of the explanatory variables. In order to correct for the heteroscedasticity in the logit model, all variables are weighted by the inverse of the square root of the variance of the estimated log odds ratio, where that variance V_i is given by:

$$V_i = n_i / r_i(n_i - r_i),$$

where n_i is the total number of votes cast in tract i and r_i is the number of yes votes in tract i .²⁰

Table 3 presents the results. We obtain an adjusted R^2 of 0.92, and so are able to explain a significant proportion of the variance in voting behavior across tracts. In addition to the estimated coefficients and their associated t-statistics, we also report the *impact* of the explanatory variables, which we define as the estimated impact of a one-standard deviation increase in the explanatory variable on the proportion of the tract voting yes, holding other variables constant, estimated at the mean value of $P = .5686$. This allows us to have some sense of the magnitude of the effects of the explanatory variables beyond the question of whether the effect is statistically significant. Note that care must be taken in interpreting the estimated value of the constant term, since these results are for a weighted regression as explained above.

²⁰ Pindyck and Rubinfeld, *Econometric Models and Economic Forecasts*, p. 311.

Table 3
Regression Results

Dependent Variable: Log of the Odds of Voting Yes on Proposal K		
Independent Variable	Coefficient (t-statistic)	Impact of a
One- Deviation		Standard
P^a		Increase on
% Voting Democrat	+0.0233 (27.11)*	+ .1208
Per Capita Income	+8.63x10 ⁻⁷ (0.60)	+ .0026
Median Price of Owner-Occupied Houses	-3.19x10 ⁻⁸ (-0.18)	- .0007
% of Population that are Renters	+0.0018 (4.07)*	+ .0104
% of over-25 Population with at least a Bachelor's degree	+0.0075 (12.81)*	+ .0342
% Female	+0.0013 (0.52)	+ .0012
% Over-65	-0.0021 (-1.32)	- .0034
% of Households with Children at Home	-0.0015 (-1.38)	- .0036
% Black	+0.0042 (8.55)*	+ .0408
% of Households with Access to a Vehicle	-0.0155 (-12.66)*	- .0340
Miles Distant from Census Tract 5180	-0.0066 (-8.54)*	- .0180
Constant	-0.6858 (-2.20)	
F (11, 917) = 969.08 Adjusted R ² = 0.92 N = 929		

* Significant at the .01 level

a The effect on the predicted value of the proportion of the census tract voting Yes on Proposal K as a result of a one-standard deviation increase in the independent variable, holding all other independent variables constant, taken from the mean value of P = .5686.

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**Funding for Research Atlanta, Inc.
is provided mainly by contributions
from businesses, foundations and individuals.**

Donations are tax-deductible.

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