# Support for Earmarked Public Spending on Culture: Evidence from a Referendum in Metropolitan Detroit

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Using the precinct-level voting results of a 2002 referendum in Metropolitan Detroit to increase property taxes, with the proceeds earmarked for cultural institutions, this paper inquires into the pattern of voting support for an increased public funding of culture. The estimation matches voting precincts to census tracts, and employs tract-level economic and demographic data. Results are compared with public opinion survey data from the United States and a similar referendum in Switzerland.

On November 5, 2002, voters in Metropolitan Detroit's Wayne and Oakland counties narrowly defeated Proposal K, a property tax increase earmarked for arts and culture. A number of cities in the United States. have adopted special tax measures for cultural funding, sometimes with the goal of urban renewal,[1] and more recently with the notion that an improved cultural ambiance will attract the mobile, young, and rich "creative class."[2] This paper uses precinct-level voting results and census tract data to investigate what economic and demographic factors might be associated with support for increased taxes for culture. While previous studies of support for public funding of culture have used contingent valuation methods[3] or public opinion data from the General Social

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1. Elizabeth Strom, "Converting Pork into Porcelain: Cultural Institutions and Downtown Development," *Urban Affairs Review* 38 (2002): 3–21; and Arthur C. Brooks and Roland J. Kushner, "Cultural Districts and Urban Development," *International Journal of Arts Management* 3, no. 2 (2001): 4–15.

2. Richard Florida, *The Rise of the Creative Class* (New York: Basic, 2002).

3. For a survey, see Douglas S. Noonan, "Contingent Valuation and Cultural Resources: A Meta-Analytic Review of the Literature," *Journal of Cultural Economics* 27 (2003): 159–176.

Survey,[4] to our knowledge this is the first empirical U.S. study of a culture-tax referendum.[5] The results represent an advance in our understanding of the public's willingness to pay for cultural institutions, as in this referendum setting the proposed method of finance and the distribution of revenues raised were quite specific and transparent.

Why *public* funding for culture? We could divide the reasons someone might support a tax increase to subsidize cultural institutions into two types. First, if we think of cultural consumption as a private good, those individuals with strong preferences for the good will benefit from having public subsidy for their private consumption.[6] The arts may be particularly conducive to rent seeking, as private consumers will attempt to persuade legislators of the public good that comes from cultural funding.[7] Second, culture has aspects of a public good, and so there might be legitimate reasons for public support of something that would otherwise be underprovided by the private sector. These reasons could be equity based, where provision of in-kind cultural goods ensures that those individuals from underserved communities have access to the arts and culture, or they could be based on market failures, where there are externalities in consumption and production of the arts arising from individuals wanting to ensure the preservation of cultural goods and institutions for future generations, and perhaps to build a sense of community and civic pride.[8]

Of course, accepting that there might be rationales for public funding of culture does not necessarily imply support for *earmarked* taxes for culture. From a public budgeting viewpoint, the essence of an earmarked tax is that it imposes a constraint on the allocation of public funds. Support for earmarked funding will come from cultural organizations and voters who have strong preferences for cultural consumption, and who see earmarking as a way to insulate public cultural funding from fluctuations in state and local government revenues, especially if cultural funding is seen as particularly vulnerable during tough budget conditions.[9] But there are other arguments that can be made for

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4. Arthur C. Brooks, "Who Opposes Government Arts Funding?", *Public Choice* 108 (2001): 355–367; Arthur C. Brooks, "In Search of True Public Arts Support," *Public Budgeting and Finance* 24, no. 2 (2004): 88–100; and Gregory B. Lewis and Arthur C. Brooks, "A Question of Morality: Artists' Values and Public Funding for the Arts," *Public Administration Review* 65, no. 1 (2005): 8–17.

5. But see Christine R. Martell, "Dedicated Funding for Arts, Culture, and Science," *Public Finance and Management* 4 (2004): 50–74, for an analysis of the successful efforts to adopt earmarked funding for the arts in Metropolitan Denver.

6. For a model, see Dennis Epple and Richard E. Romano, "Public Provision of Private Goods," *Journal of Political Economy* 104 (1996): 57–84.

7. William D. Grampp, "Rent-Seeking in Arts Policy," *Public Choice* 60 (1989): 113–121.

8. See Michael Rushton, "Culture and Public Finance," *Public Finance and Management* 4 (2004): 1–20, or David Throsby, *Economics and Culture* (Cambridge, UK: Cambridge University Press, 2001).

9. Bingyuang Hsiung, "A Note on Earmarked Taxes," *Public Finance Review* 29 (2001): 223–232, likens earmarked taxes to the compartmentalization design of submarines, where they are a means of "damage control" so that budget problems in one area do not spread to all areas of the budget.

earmarking: that it improves citizen participation in budget allocation, and also the level of transparency.[10]

Earmarking of revenues for the arts and culture in the U.S. local and state governments has generally been through the dedication of a portion of hotel occupancy, retail sales, or property taxes.[11] Perhaps the most studied case of earmarked revenues for culture has been the Scientific and Cultural Facilities District of Metropolitan Denver, which also required approval by voters through a referendum, and allocates one-tenth of one percentage point of the retail sales tax to culture. The allocation is done to three "tiers" of organizations, with large "Tier 1" cultural institutions receiving a guaranteed share of the revenue pool, medium-sized "Tier 2" organizations competing for funding, and finally a share of the revenue pool being returned to the local communities where funds were raised for allocation to small, community-based "Tier 3" organizations.[12]

St. Louis' Zoo Museum District (ZMD) provided earmarked property tax revenues for five large cultural institutions, in 2002, raising a total of $52.6 million from St. Louis City and County. The revenue is raised at a rate of 22.2 cents per $100 assessed valuation, with each participating institution receiving a fixed share; as in Denver and Proposal K in Detroit, the ZMD allocation was subject to approval by referendum. St. Louis is the only major metropolitan area to use the property tax as the source of earmarked cultural funding.[13]

The rest of this paper is organized as follows. The next section describes the proposal that was put before voters, and provides some context to the vote. We then set out a model of voter behavior, with some predictions on how demographic and economic variables would affect the vote. This leads to presentation of the empirical findings, and finally some conclusions.

## PROPOSAL K

Proposal K, "Metropolitan Arts and Culture Council—Arts, Parks and Kids Millage Proposal," was meant to raise funds to "support nonprofit regional history, science and arts institutions and local arts and recreation programs" within Wayne and Oakland counties. The tax increase of 0.5 million on residential and commercial property (i.e., 50

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10. The seminal essay is James Buchanan, "The Economics of Earmarked Taxes," *Journal of Political Economy* 71 (1963): 457–469; see also Margaret Wilkinson, "Paying for Public Spending: Is There a Role for Earmarked Taxes?", *Fiscal Studies* 15 (1994): 119–135.

11. See Michael Rushton, "Earmarked Taxes for the Arts: US Experience and Policy Implications," *International Journal of Arts Management* 6, no. 3 (2004): 38–48, for a survey.

12. See Christine R. Martell and M. Jae Moon, "Cultural Governance: A Comparative Study of Three Cultural Districts," *Administration and Society* 33 (2001): 432–454, for discussion of the Denver earmarked tax.

13. Americans for the Arts, *Property Tax Funding for the Arts* (Washington, DC: Americans for the Arts, 1998).

cents per \$1,000 taxable value, which is one-half of market value) was expected to generate approximately \$46 million in 2003; an owner–occupier of a property valued at the two-county median of \$130,000 would have had an increase in tax of \$32.50. Of the revenues collected, one-third of the total would have been returned to the municipalities where the revenues were generated for the funding of cultural and recreational programs and facilities. The other two-thirds of the revenues were earmarked for 17 major cultural institutions, with the initial distribution based on a three-year rolling average of the operating expenses of the institution as a proportion of the total operating expenses across the 17 institutions, but with no single institution allowed to receive more than \$4 million from the allocation (which implied a cap on the allocation to four of the institutions). It was estimated that for the "capped" institutions Proposal K would have added about 11 percent to their budgets, while smaller institutions were expecting increases in their budgets of about 23 percent.[14] The allocation was to have been overseen by a nine-member council chosen to ensure balanced regional representation.

For passage, Proposal K required 60 percent approval in Wayne County, which includes the City of Detroit, and 50 percent approval in Oakland County. The proposal narrowly failed in each county, receiving 56.87 percent support in Wayne and 46.15 percent support in Oakland.

A few remarks on the context of the referendum are in order. First, most geographers would place *three* counties in Metro Detroit: Wayne, Oakland, and Macomb. Macomb County was not included in the Proposal K initiative; the state government authorization for the creation of a metropolitan region council for arts and cultural funding, Public Act 375 of 1998, applied only to counties that at that time had a population of at least 780,000, which then included Wayne and Oakland but not Macomb (although Macomb's population now exceeds that threshold).[15] That Macomb residents could have received some of the benefits of Proposal K without bearing the cost may have caused some resentment among voters in Oakland and Wayne counties.[16] In the empirical work below we treat Census Tract 5180 in downtown Detroit as the "cultural center," but the farthest reaches of Holly Township in Oakland County are over 57 miles from Tract 5180, while the City of Warren in Macomb County is less than 10 miles from downtown Detroit.

Second, Detroit, once the center of the automobile industry, now competes in the global marketplace and has suffered from economic decline over recent decades. As with many U.S. 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

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14. Citizens Research Council of Michigan, Memorandum No. 1067, September 2002.

15. Ibid.

16. 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*, 7 October 2002.

richest in the U.S. "In metropolitan Detroit there is much more reverse commuting from city to suburbs for employment than in most other metropolitan areas."[17]

Third, Metro Detroit is highly segregated along racial lines, even where there is comparable socio-economic status.[18] There is some evidence that racial and ethnic divisions make populations less willing to finance public goods.[19]

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 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.[20] 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."[21]

## MODELING THE VOTING DECISION

I use what has become a standard technique for modeling voting behavior. 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

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

17. Reynolds Farley, Sheldon Danzinger, and Harry J. Holzer, *Detroit Divided* (New York: Russell Sage Foundation, 2000), 111.

18. 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.

19. 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.

20. Provenzano, "Proposal K."

21. Frank Provenzano, "Arts, Recreation Tax Fails Again," *Detroit Free Press*, 6 November 2002. Bruno Frey and Werner Pommerehne, "Public Expenditure on the Arts and Direct Democracy: The Use of Referenda in Switzerland," *European Journal of Cultural Policy* 2, no. 1 (1995): 55–65, suggest that two keys to obtaining voter support are, first, to make it clear to individuals that they will directly benefit from the expenditures and, second, to show that there is a low cost per person from the initiative.

and $a$ and $b$ are parameters. The idea behind this model is that individuals have some threshold value such that when $(a+bX_i)$ exceeds that threshold, the individual votes "yes." When voting behavior follows 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:

$$\log\left(P_i/(1-P_i)\right) = a + bX_i + \varepsilon_i \tag{2}$$

where $\varepsilon_i$ is an error term. Assume for now 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 voted "yes," and that $X_i$ can likewise be approximated by group-level data. This assumption raises the problem of "ecological inference," which is discussed in more detail later in the article.

In order to correct for the heteroskedasticity in the logit model, all variables are weighted by the inverse of the square root of the variance of the error term $\varepsilon_i$, where the variance $V_i$ is given by

$$V_i = n_i/r_i(n_i - r_i) \tag{3}$$

where $n_i$ is the total number of votes cast in tract $i$ and $r_i$ is the number of yes votes in tract $i$.[22]

Next we turn to the choice of explanatory variables.


*Political*

In the United States, political liberals are more likely than political conservatives to favor public funding of the arts. The division was most salient during the early 1990s when the National Endowment for the Arts (NEA) was heavily criticized, to the point of calls for its abolition, by conservatives who objected to controversial art exhibitions that had ties (sometimes rather loose ties) with NEA funding. However, from the founding of the NEA in the 1960s there was conservative opposition. The point is not that conservatives enjoy art less than liberals do; the debate is about public funding and the actual results of that funding in terms of the specific art that is produced, exhibited, and performed.[23]

What can be learned from public opinion surveys about political leanings and support for public funding of the arts? First, as one "survey of surveys" has found, responses to

22. See Robert S. Pindyck and Daniel L. Rubinfeld, *Econometric Models and Economic Forecasts*, 4th ed. (New York: Irwin McGraw-Hill, 1998), Chapter 11, or Damodar N. Gujarati, *Basic Econometrics*, 3rd ed. (New York: McGraw-Hill, 1995), Chapter 16.

23. Robert Hughes, *Culture of Complaint* (New York: Warner, 1993), claims that there is a deep-rooted idea among Americans that art is valuable because of its capacity to provide moral uplift, and George Lakoff, *Moral Politics*, 2nd ed. (Chicago: University of Chicago Press, 2002), tries to explain U.S. controversies over public funding in terms of what morals liberals and conservatives will seek in art. Michael Rushton, "Transaction Cost Politics and the National Endowment for the Arts," *Poetics* 31 (2003): 133–150, attempts a political economy approach, noting that support for public funding of art will decrease as the public, and their political representatives, lose faith in the ability of advisers and decision makers in the publicly funded arts councils to be able to distinguish between the culturally valuable and the meretricious.

questions about public funding of the arts tend to vary a lot with subtle changes in how the question is framed; this variability is an indication that "many people's opinions about government assistance to the arts are ill-formed, weakly held, and therefore up for grabs."[24] In addition, we must distinguish between the generally positive support for public funding found in surveys and the "decidedly less" support for *increased* funding for the arts, which is what Proposal K was all about.[25] With these caveats in mind, recent surveys show a correlation between support for increased arts funding and being a self-identified political liberal. 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."[26]

The general election for state governor was on the same ballot as Proposal K. More voters cast a vote in the gubernatorial contest (1,002,101) than in the Proposal K referendum (925,630), but the difference in total votes cast is less than 10 percent. As a proxy for "liberal" political views, the regression analysis uses the proportion of the votes for governor that went to the Democratic candidate, predicting a positive coefficient.

*Economic*

Per capita income is included as an explanatory variable. One might expect that, other things being equal, a higher income level would lead to more support for the culture tax, as 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.[27]

The other important economic considerations have to do with home ownership, as Proposal K is concerned with a property tax increase, and so those who own more valuable homes would face a higher burden. I do not wish in this paper to enter the lively and complex debates over the incidence of the property tax in general, except to say that we would expect at least to some degree the "home voter" hypothesis to apply: homeowners considering Proposal K will ask not only how their property tax bill will rise, but

24. Becky Pettit and Paul DiMaggio, "Public Sentiments Towards the Arts: A Critical Reanalysis of 13 Opinion Surveys," Working Paper #5 (Princeton, NJ: Princeton University, Center for Arts and Cultural Policy Studies, Spring 1998), 8.

25. Ibid., 20.

26. Brooks, "In Search of True Public Arts Support."; 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?".

27. 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.

also how the earmarked expenditures from the proposal might serve to increase property values.[28] Having no prior prediction on how the market values of houses will affect voting preferences, the median value of owner-occupied homes is included as an exploratory explanatory variable.

Also included is the proportion of individuals living in rental accommodation. While we cannot know precisely the degree to which property tax increases might be shifted forward to renters, there is evidence that forward shifting of the tax increase to renters would be slight, especially when there are parts of the metro area (i.e., Macomb County) that would not have been subject to the tax increase.[29] It is therefore likely that renters might see Proposal K as a way to have private and public benefits financed by someone other than themselves, and so we expect a positive coefficient.[30]

### Demographic and Geographic

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

Also included as an explanatory variable is 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. I also include the proportion of the population that is female; there is little variance in the gender composition of tracts, but 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

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28. William A. Fischel, "Homevoters, Municipal Corporate Governance, and the Benefit View of the Property Tax," *National Tax Journal* 54 (2001): 157–173.

29. On the incidence of the property tax in general, see George R. Zodrow, "The Property Tax as a Capital Tax: A Room with Three Views," *National Tax Journal* 54 (2001): 139–156; on forward shifting of the property tax to renters, see Robert J. Carroll and John Yinger, "Is the Property Tax a Benefit Tax? The Case of Rental Housing," *National Tax Journal* 47 (1994): 295–316.

30. 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.

that parents will find that the time they have available to attend cultural events is quite curtailed.

As noted above, Detroit is a racially segregated city, and so it makes sense to include the proportion of the population of the Census Tract 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 support that is predominantly one race or another. I do not speculate in advance on the character of cultural institutions in the Detroit area, but include the variable for exploratory purposes.

Finally, I include two measures of distance from cultural institutions. The first is the proportion of Census Tract residents having access to a vehicle; I predict that lack of access to a vehicle would make it difficult for residents to attend cultural institutions and so be less in favor of a tax increase. Second, I include as an explanatory variable the distance from Census Tract 5180, which I have 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 17 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 1920s, 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."[31]

## THE DATA AND RESULTS

For the empirical analysis I assign each voting precinct to a Census Tract, or Tracts if the precinct overlaps two or more tracts. When there is an overlap, the precinct results are evenly divided across the tracts involved. We do not know exactly how the actual votes in a precinct come from the different tracts when there is an overlap, so there is some unavoidable measurement error, although there is no prior reason to expect this source of error to be biased. The match was done manually, using maps of precinct boundaries provided by Oakland County and by the City of Detroit and the various townships of Wayne County, and maps of Census Tracts. There were 1,871 voting precincts; roughly two-thirds of the precincts were entirely contained within single Census Tracts, and the other one-third had to be divided between tracts. For a small number of tracts in the two counties there were no voting data, but for 929 of the 951 tracts in the two counties combined, we have voting and household data, and this becomes the sample.

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31. Farley, Danzinger, and Holzer, *Detroit Divided*, 26.

The Census data are necessarily slightly outdated, as they are taken from the 2000 Census and applied to a 2002 vote.

The regression is of the log of the odds of voting "yes" in the referendum as a linear function of the explanatory variables as described in the previous section.

As mentioned above, although the model used in this paper is an analysis of individual behavior, the data are grouped by Census Tract, and so there is the problem of "ecological inference": the task of making inference about individual behavior when only grouped data are available. The essence of the problem is that such inference, although frequently made, can be highly unreliable.[32] In general, the assumption that permits ecological inference is that:

> individuals have been grouped in such a way that their scores on the dependent variable are unrelated to the aggregation in which they fall, except indirectly through their scores in the independent variable. That is, any relationship between an individual's score on the dependent variable and the aggregation into which he is placed must be indirect—a spurious relationship caused by grouping on the independent variable, and by the individual-level relationship between the independent and dependent variables.[33]

The extreme case where this assumption would hold perfectly would be where individuals are perfectly segregated according to the characteristics included in the set of explanatory variables $X$, and while this holds for the variable "distance from the cultural center," it does not for other variables.

Schulze and Ursprung use the same techniques employed in this paper to analyze a 1994 referendum on support for the Zürich Opera House, using precinct-level data.[34] Their solution to the ecological inference problem is that by "assuming identical individuals with respect to $X_i$ [which has the same meaning as in this paper], we can approximate the probability . . . that a representative voter will vote 'yes' by the fraction of voters that actually voted 'yes'";[35] they note the caution from McFadden and Reid[36] that for heterogeneous groups the use of averages might lead to an underestimation of individual elasticities.

There is no perfect solution to the ecological inference problem; in voting models only grouped data (in our case, by voting precinct and Census Tract) are available, and

32. Two seminal essays describing the problem are W. S. Robinson, "Ecological Correlations and the Behavior of Individuals," *American Sociological Review* 15, no. 3 (1950): 351–357, and W. Phillips Shively, 'Ecological' Inference: The Use of Aggregate Data to Study Individuals," *American Political Science Review* 63, no. 4 (1969): 1183–1196. A concise survey of recent developments in the problem is Alexander A. Schuessler, "Ecological Inference," *Proceedings of the National Academy of Sciences* 96 (1999): 10578–10581.

33. Shively, 1186.

34. 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.

35. Ibid., 138.

36. Daniel McFadden and Fred Reid, "Aggregate Travel Demand Forecasting from Disaggregated Behavioral Models," *Transportation Research Record* 534 (1975): 24–37.

**TABLE 1**
**Regression Results**

**Dependent Variable: Log of the Odds of Voting "Yes" on Proposal K**

| Independent Variable | Coefficient | $t$-Statistic with Robust Standard Errors | Impact of a One Standard Deviation Increase on $P$[a] |
|---|---|---|---|
| % Voting democrat | +0.0233 | 23.92[*] | +0.1208 |
| Per capita income | $+8.63 \times 10^{-7}$ | 0.54 | +0.0026 |
| Median price of owner-occupied houses | $-3.19 \times 10^{-8}$ | −0.13 | −0.0007 |
| % of population that are renters | +0.0018 | 3.85[*] | +0.0104 |
| % of over 25 population with at least a bachelor's degree | +0.0075 | 8.05[*] | +0.0342 |
| % Female | +0.0013 | 0.34 | +0.0012 |
| % Over 65 | −0.0021 | −1.15 | −0.0034 |
| % of households with children at home | −0.0015 | −1.25 | −0.0036 |
| % Black | +0.0042 | 7.86[*] | +0.0408 |
| % of households with access to a vehicle | −0.0155 | −8.73[*] | −0.0340 |
| Miles distant from Census Tract 5180 | −0.0066 | −7.12[*] | −0.0180 |
| Constant | −0.6858 | −2.31 | |
| $F(11, 917) = 969.08$ | Adjusted $R^2 = 0.92$ | $N = 929$ | |

[*]Significant at the 0.01 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 $P = 0.5686$.

information about individuals and their votes is simply not present.[37] And so the regression results that follow should strictly be interpreted as a description of the voting patterns across Census Tracts according to the characteristics of the tracts, and not necessarily of the voting behavior of individuals as a function of the characteristics of individuals.

Table 1 reports the regression results. In addition to the estimated coefficients and their associated $t$-statistics, I also report the *impact* of the explanatory variables, defined here as the estimated impact of a one standard deviation increase in the explanatory

37. In a recent survey, David A. Freedman, "Ecological Inference and the Ecological Fallacy," Technical Report No. 549 for the International Encyclopedia of the Social & Behavioral Sciences (15 October 1999), concluded: "Aggregate data are often easier to obtain than data on individuals, and may offer valuable clues about individual behavior. Ecological inference will therefore continue to be made. The problems of confounding and aggregation bias, however, are unlikely to be resolved in the proximate future" (p. 5).

variable on the proportion of the tract voting "yes," holding other variables constant, estimated at the mean value of $P = 0.57$. This allows us to have some sense of the relative magnitude of the effects of the explanatory variables beyond the question of whether the effect is statistically significant.

As expected, the percentage of the tract's electorate that chose the Democratic Party candidate for governor is a positive and significant predictor of support for Proposal K. Of all the explanatory variables this has the highest impact, with a one standard deviation increase in the proportion voting Democrat (a 22.4 percentage point increase) increasing the support for Proposal K by 12.1 percentage points, other variables held constant.

The per capita income of the tract has an insignificant effect on the level of support for the tax increase, which is consistent with the result found by Brooks in his study of opinion surveys.[38] We also see that the median housing price is statistically insignificant. The proportion of the population that is in rental accommodation has a significant, positive effect on support for the tax, consistent with 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. But the effect of the proportion renting accommodation is rather small, with a one standard deviation increase expected to raise the proportion of "yes" votes by just one percentage point.

The proportion of the population over the age of 25 with at least a bachelor's degree has a significant, positive effect, as expected. The mean value across Census Tracts for this variable is 23.5 percent, and a one standard deviation (18.8 percentage points) increase, other variables held equal, leads to an increase in support for Proposal K by 3.4 percentage points.

Results are insignificant for the proportion of the Census Tract that is female, or over age 65, and also for the proportion of households with children living at home. However, the proportion that is black has a significant, positive effect on support for Proposal K, with a one standard deviation increase in the proportion that is black (an increase of 40.1 percentage points; note how such a high standard deviation indicates racial segregation) increasing the "yes" vote by 4.1 percentage points. Again we have a result that is consistent with opinion survey results.[39] However, this is a case where we should be wary of comparing national statistics to the Detroit vote, as we would expect that each metropolitan area in the United States would have its own, specific history and cultural practices regarding the arts and culture and minority groups.

One initially surprising result is that having access to a vehicle has a significant and negative effect on support for Proposal K.[40] Finally, as predicted, there is a significant

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38. Brooks, "In Search of True Public Arts Support," Table 3; Brooks does note, however, that higher-income individuals are significantly more likely to engage in *private* giving to the arts.

39. Ibid.

40. A referee suggests that this could be explained by the idea that if one can drive to many sorts of activities, some far away, it is less important to have publicly supported cultural institutions close by.

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.

In summary, we find that voting Democrat in the general election had the most significance in explaining variation in support for Proposal K, and that higher education, living in rental accommodation, being black, and living close to the cultural center of the city were also important indicators of increased support for this earmarked tax increase for culture.

It is interesting to compare these results with Swiss referenda on the arts. Schulze and Ursprung[41] also find a significant positive effect of education and a significant negative effect of distance from the city center. They find that income has a significant positive effect on support for the Opera House; we might explain the lack of strong correlation in our article by noting that Detroit's Proposal K would also provide 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, but note that this could be an artifact of the ecological inference problem.


## CONCLUSION

There has long been disagreement in the United States on the appropriate role for government in financing arts and culture. It is not a disagreement that looks like it will be settled any time soon, and we are currently seeing new aspects added to the debate as people ask whether the path to strong urban growth depends on attracting the "creative class" of workers. However, we can begin to shed some light on the policy problem by observing how voters tend to think about the question, especially in a referendum setting in which the proposed increase in public funding is from a transparent, earmarked tax source.

Perhaps most striking about the results in this study is the strength of the correlation with the Democratic vote for state governor and the vote for the arts tax, which suggests an important role for general political ideology. It may even be the case that this understanding has led to changes in the kind of cultural funding governments are willing to provide. For example, recently we have seen an explicit shift in emphasis at the NEA away from funding controversial art and toward preservation and to arts education for traditionally underserved populations, and this has led to praise for the NEA from conservative commentators, something unheard of in the 1990s.[42]

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41. Schulze and Urspung.
42. 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*, 8 March 2004, A25 (national edition).

In addition to the caveats resulting from the ecological inference problem, it is also important to remember that this is a study of a single referendum in a single metropolitan area, and only a part of the total metropolitan area at that. Hopefully we will have the opportunity to assess more of such natural experiments, with a goal of public budgeting decisions about culture being better informed by knowledge of which voters perceive benefits from such expenditures.

## NOTE