Explaining The Appearance and Success of Voter Referenda For Open-Space Conservation

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The protection of open space from the advance of “urban sprawl” has emerged as one of the more pressing environmental issues in the United States. Open space is generally understood to be a public good that will be under-provided without policy interventions. Policy-makers have begun efforts to protect open-space using various instruments—including zoning regulations, development taxes, urban growth boundaries, conservation easements, and public acquisition of undeveloped land. Increasingly, citizens are also becoming directly involved in open-space conservation through ballot initiatives designed to implement mechanisms for public land acquisition. Nearly 1,000 jurisdictions at the state, county, and local levels held open-space referenda between 1998 and 2003, and approximately 80 percent of these initiatives passed, raising over $21 billion for open-space conservation.

The proliferation and high success rate of open-space ballot initiatives raise several economic and policy-relevant questions. What factors contribute to the appearance of an open-space referendum in a jurisdiction? How does an initiative’s funding mechanism—such as a bond, property tax, sales tax, or income tax—affect the way citizens vote? How responsive are favorable votes to the costs of an open-space initiative? How do socioeconomic characteristics influence demand and therefore voting results for open-space conservation? And what other features of a referendum affect voting outcomes?

These questions motivate our analysis in this paper. We construct a data set of open-space referenda that occurred in the United States between 1998 and 2003. Detailed information on each referendum comes from annual reports, titled \textit{LandVote}, that are published by the Trust for Public Lands (TPL) and the Land Trust Alliance (LTA). In total, these reports summarize the results of 968 state, county, and local ballot questions on open space. These data include each referendum’s political jurisdiction, proportion voting for and against, financing mechanism, financing rate, land characteristics, and other policy-relevant variables. For each jurisdiction we also collect data from the U.S. Census on socioeconomic characteristics. Then, using the combined data, we estimate econometric models to determine the impact of referendum characteristics and socioeconomic variables on voting results.

In addition to the nationwide analysis, we conduct two focused analyses of referenda that occurred in New Jersey and Massachusetts. Because of statewide policies that provide incentives for local jurisdictions to raise taxes for open-space conservation, there were numerous referenda in both states—237 in New Jersey and 137 in Massachusetts. For both states we
collect further data. For all jurisdictions—those having held a referendum and those having not held a referendum—we collected census data, geographic information system (GIS) data on open space and open-space loss, and data on existing tax levels. We then estimate models for each state to (1) predict the probability that a jurisdiction has held an open-space referendum, and (2) to explain voting results after accounting for potential sample selection.

Other researchers have investigated related questions. In a pioneering study of referenda results, Deacon and Shapiro (1975) analyze voting outcomes for a law in California to protect coastal zones from development. They find evidence that the natural coastal environment is a normal good, but the effect is not statistically significant. Kahn and Matsusaka (1997) also analyze statewide referenda in California. They find evidence that collectively provided open space is a normal good, except when income is very high, in which case it becomes inferior. Another study by Kline and Wichelns (1994) uses statewide referenda in Pennsylvania and Rhode Island to investigate demand for the purchase of farmland development rights.

Because the aforementioned studies use local voting results in statewide referenda, they cannot address the question of what factors contribute to the appearance of an open-space referendum in the first place. Howell-Moroney (2004) considers this question in a study of municipalities throughout the Delaware Valley region. He finds that the appearance of a referendum is responsive to patterns of land use, whereby low population density and loss of open space increase the probability of a referendum occurring. Howell-Moroney’s study is a response to another paper by Romero and Liserio (2002). The latter uses nationwide data on referenda that occurred between 1998 and 1999, and it finds that only socioeconomic factors motivate open-space referenda, while actual patterns of land use do not play a role.

Our paper makes four primary contributions to the literature. First, we construct the most comprehensive data set on open-space referenda to date. Second, we take advantage of variation in the financing mechanism across referenda (e.g., bonds or taxes) in order to investigate whether the type of mechanism proposed affects voter support for open-space acquisition. Third, we exploit variation is the funding rates within the different mechanisms (e.g., bond amounts and tax rates) to determine how responsive voters are to the costs of an open-space initiative. Fourth, we conduct detailed analyses of two states in order to determine the factors that influence the appearance of a referendum, in addition to the factors that influence the success of a referendum.

The results provide new insights into demand for open space and into the relationship between characteristics of an open-space policy and voter support. We find strong evidence that voters are more like to approve bonds than tax increases. Not surprisingly, funding rates also matter—with higher rates generally decreasing the odds of a yes vote. Interestingly, the opposite result emerges at the state and county levels, perhaps due to the potential for “spillinx” effects. In general, we find that the factors influencing referenda outcomes differ between the state and county levels and the local level.

We also find evidence that jurisdictions holding open-space referenda differ significantly from those that do not. Most notably, referenda tend to occur in wealthier and lower density communities that have experienced greater population growth. Jurisdictions with greater
amounts of open space are more likely to have held a referendum, but the surprising result is that, over some ranges, more open-space loss actually decreases voter support. While socioeconomic and demographic variables influence where referenda occur, they have less of an effect on election outcomes. Nevertheless, we find further evidence that collectively provided open space is a normal good. Other findings relate to the importance of farmland as a type of open space and to specific features of the proposed open-space policies.

References


