

## THE EMPIRICAL EVIDENCE FOR CITIZEN INFORMATION AND A LOCAL MARKET FOR PUBLIC GOODS

*In their 1993 article in this Review, Paul Teske, Mark Schneider, Michael Mintrom, and Samuel Best sought to establish the microfoundations for a model of a competitive market for public services between local governments in polycentric regions. An important part of their model focused on subgroups of informed citizens, especially recent movers. Theoretical analysis was supplemented by an empirical study of the factors shaping accuracy of Long Island homeowners' information about relative expenditures and tax rates of their school districts. David Lowery, W. E. Lyons and Ruth Hoogland DeHoog criticize the relevance of this empirical evidence, suggesting the atypical nature of education as a service (especially in this site) and challenging the sufficiency of the demonstrated levels of information for generating a competitive market. Teske and his colleagues reply by pointing out the general importance of education throughout American local policymaking and by defending the relevance of their measures and conclusions for their market model.*

### COMMENT

Teske, Schneider, Mintrom, and Best (1993) have provided us with a new interpretation of the microlevel foundations of the Tiebout model (1956). Replacing Tiebout's untenable assumptions of perfect information and perfect mobility, they argue that marginal consumers—those entering a jurisdiction who are highly attentive to public goods and services—are sufficiently influential to generate a public goods quasi market and its attendant efficiency advantages. Obviously, this more realistic interpretation has rather profound implications for how we organize the provision of local public goods and services.

Science, however, entails more than presenting a new idea. Evidence also must be presented to establish, however tentatively, its truth status. But the proponents of a theory are often poor judges of such evidence. Being human, we are all too susceptible to any number of inadvertent errors of interpretation. Accordingly, as noted by philosopher of science David Hull, "The self-correction so important to science does not depend on scientists presenting totally unbiased results but on other scientists, with different biases, checking them" (1988, 321). In that spirit we reexamine the evidence presented by Teske and his colleagues in support of their model. The potential importance of their work justifies this examination. It is also justified because it illustrates well the ways—some trivial and some not—in which biases may infect the selection and interpretation of evidence. Thus, we provide a cautionary tale about the very human enterprise of science.

### TESTING THE MODEL

To assess the truth status of the model offered by Teske and colleagues, we need estimates of two quantities: (1) how many informed consumers of local

government services there are and (2) how many informed consumers are required to produce a market. The model will be supported if the first proportion is greater than or equal to the second. On both sides of the comparison, Teske and colleagues shape the data to support their model.

#### Estimates of Informed Public Goods Consumers

Numbers of informed consumers are inflated in four ways. First, they examine only education. Critics of Tiebout have long admitted that citizens are highly attentive to education when compared to other local services. For this reason, we excluded education from our analysis of two Kentucky urban areas in which we challenge the empirical foundations of the public choice approach to local public goods provision, thereby conceding that the unusual salience of local education may generate marketlike traits (Lyons, Lowery, and DeHoog 1992). More to the point, to test a model that purports to be generally applicable to local service provision, Teske and colleagues select the best possible case for their analysis.

Even more troubling is the characterization of those who know the relative standing of their district's school spending—whether it is average, above average, or below average relative to others on Long Island—as *informed*. This is equivalent to saying that knowing the relative ordering in average price of BMWs, Fords, and Hondas makes one a fully informed consumer of automobiles. With this measure, Teske and colleagues have set the criterion level for being an informed consumer at an absurdly unchallenging level.

Third, they fail to report a salient fact about Long Island school districts—that they hold annual referenda on spending. As Inman reported in an article they cite, "The fifty-eight Long Island school districts . . . determines its [*sic*] current expenditures per pupil via an annual budget referendum. Fall budgets are submitted by the school board to the voters for approval in the prior spring" (Inman 1978,

54). Few states do this for school spending, and virtually no jurisdictions do so for other services—fire, police, parks, and so on. This highly unusual annual cue must surely raise information levels about education spending. Whatever the merits of this practice, it should be obvious that it makes the case of Long Island school spending highly unusual in a way that seriously undermines the generalizability of the findings to almost all local public choice problems.

Fourth and most seriously, Teske and colleagues profoundly mischaracterize the citizen's choice problem in order to make the data support their theory. Their focus on the single service of education is essential if their later use of findings on the role of marginal consumers of private goods is to have any validity. But the local public goods market is not organized this way. When one "buys" a local school district, one also purchases through location in a municipality police services, fire protection, street lighting, sanitation services, and so on. It is as if when purchasing a sofa, one automatically purchased as well a television set, a refrigerator, and a car. Tiebout fully recognized this by emphasizing *patterns of revenue expenditure* that encompass all of the goods, services, and costs associated with residing in a locality. And Teske and colleagues at one point refer to "the complicated package of local public goods that Tiebout's shoppers purchase along with their residential location" (p. 705). But they failed to recognize its implication that they must do more to support their model than find that 20% of consumers are "informed" about education. They must demonstrate that 20% are "informed" about education, *and* police services, *and* fire protection, *and* sanitation, *and* taxes, *and* all of the other items comprising the local tax and service package.

### Estimates of a Market Threshold

The evidence they employ to define a threshold at which the proportion of informed marginal consumers is sufficient to generate a market is just as weak. Four sources are cited, all flawed in one manner or another (p. 709).

The weakest is their reference to Senator Paul Douglas's argument that a competitive market will develop if only 10% of consumers are informed. Wilde and Schwartz are cited as the source of this claim, but Teske and colleagues omit the full quote: "Senator Douglas, the principal legislative supporter of [Truth in Lending Law], asserted, *unfortunately without explanation*, that a competitive market would exist if 'only' 10 percent of the consumers were cost conscious" (Wilde and Schwartz 1979, 543; emphasis ours). What appears to be evidence, then, is simply an unsupported and politically motivated assertion.

Their second source is Inman's (1978) test of the median voter model with data on spending referendums for Long Island school districts. They report that Inman "showed that a highly informed set of voters, making up about 13 percent of the population, was able to make local school budgets respond to their preferences" (1993, 709). But Teske and

colleagues fail to note that Inman's central finding is that these 13% are those around the median income level, unlike Teske and colleagues' informed voters, who are at the upper end of the income range. They employ empirical evidence on apples to support a hypothesis about oranges. Indeed, the key implication of Inman's study is that it is the median voters already residing within districts, not recently arriving upper-income consumers, who drive local school budgets on Long Island.

Third, Teske and colleagues cite Thorelli and Engledow (1980) and Claxton, Fry, and Portis (1974), who classify consumers on the basis of information as measured by number of store visits when making major purchases. But are these classes comparable to those used by Teske and colleagues based on knowledge about relative school spending? The high information group in the Claxton, Fry, and Portis study visited an average of 20 furniture stores during which they almost certainly gathered more information than the relative standing of each firm's median price for a couch—the value most comparable to Teske and colleagues' measure. And while the poorest-informed consumers typically visited only two stores, they certainly were able to see more than a single sofa in each. Thus the measures of information in the two studies of private market consumers surely represent something different from what is tapped by Teske and colleagues' measure. Yet their argument hinges on the comparability of the proportions falling into the superficially similar categories of high, medium, and low information. Given the qualitative differences in these categories across the public and private market studies, valid comparisons of proportions are simply implausible.

### CONCLUSION

The truth status of Teske and colleagues' model depends on the validity of both sides of the comparison they wish to make, and on both the evidence they cite remains highly questionable. By focusing on an uncommonly salient service, by selecting cases providing an atypical information cue via annual referenda, by using a trivial standard for defining high levels of information, and by ignoring the inherently compound nature of the local public goods market, Teske and colleagues have arranged a test that can tell us almost nothing about most local public choice problems. If anything in their results is surprising, it is that in so stylized a setting only 19% of the respondents could be identified as "highly informed." And by failing to provide credible evidence about how many informed consumers it takes to produce a competitive market, we cannot know if this 19% is sufficient to generate a public goods quasi market.

While this does not mean that their model is invalid, it does imply that it remains untested. Perhaps more importantly, our analysis indicates that we need to be more cautious in evaluating how proponents of a theory confront it with data. Being human,

we are all too inclined to interpret evidence selectively when motivated to do so, however inadvertently. And as David Hull has cautioned, "Any scientist who is incapable of wriggling a bit will never succeed in science, but there are also limits to the wriggling. If it becomes too pervasive, the scientist ceases to be a scientist" (1988, 281). In our view, Teske and his colleagues skate too close to those limits.

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## RESPONSE

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Scientific progress is often contentious. As a recent winner of the prestigious John Bates Clark Award in economics, Paul Krugman, observed: "In general, if people in a field have bogged down on questions that seem very hard, it is a good idea to ask whether they are really working on the right questions. Often some other question is not only easier to answer but actually more interesting! (One drawback to this trick is that it often gets people angry. An academic who has spent years on a hard problem is rarely grateful when you suggest that his field can be revived by bypassing it)" (1993, 27). Krugman's observation may explain the concluding tone of Lowery, Lyons, and DeHoog's comment, which introduces a highly personalized tone to professional discourse. In this response we address the task of identifying the right questions for future scientific examination of jurisdictional competition.

Understanding our argument requires a more sophisticated view of markets than held by Lowery, Lyons, and DeHoog. By exploring the micro foundations for macro models of the local market for public goods, we address an issue central to the understanding of competitive markets. Their notion that our model is supported only if the number of informed consumers is greater than or equal to the number of informed consumers required to produce a market reduces a complex problem to a trivial and naive standard. There are degrees of market competition and economists have not developed a divining rod that distinguishes "perfectly competitive" markets from "perfectly noncompetitive" ones. If there were such a simple test, antitrust and other complicated market regulation problems would have been resolved long ago.

Lowery, Lyons, and DeHoog admit that macro studies largely show evidence of greater efficiencies in more competitive local government settings, a Tiebout-like finding. But upon finding scant micro evidence in their own work, they simply give up: "This conclusion leaves us with something of a

mystery" (Lowery and Lyons 1989, 95). In contrast, we pursue this critical micro-macro link. In so doing, we do not rely narrowly on Tiebout but argue for a fuller theoretical model, including the role of responsive elites and informed business movers, in addition to the informed subset of mobile citizen-consumers that is the focal point of the research reported in our article. (For a fuller development see Schneider and Teske, with Mintrom 1995.)

It is important to note that Lowery, Lyons, and DeHoog do *not* challenge the macro findings of Tiebout-based research or our theoretical development of the mover as a marginal consumer. Indeed, they do *not* challenge any other theoretical element of our work. Essentially, they argue that we have biased the case for finding knowledgeable consumers and that we have not established how many consumers can be shown to make a market competitive. In the next paragraphs, we address these specific concerns. Lowery, Lyons, and DeHoog themselves admit that some of their concerns are "trivial and some not." We will show that this admission is only half right and that their comments illustrate a misunderstanding both of our model and of markets in general.

First, Lowery, Lyons, and DeHoog criticize us for focusing on an "uncommonly salient" issue, education and urge that schools are only part of a complex package of local government. Our simple answer is, yes, we do focus on education. We think our choice is a better foundation for building theories of the local market for public goods than assessing whether or not citizens are aware of which level of government collects their garbage (which was one of Lowery, Lyons, and DeHoog's research questions).

Education, as the most important locally funded public good, makes up the bulk of this market. According to the 1987 Census of Governments, local government spending for education exceeds local spending on streets, water and sewers, parks, libraries, police, fire, sanitation, housing and community development, and transit *combined*. Even for people without children, schools are important because they affect home values. To ignore education as a force shaping the local market for public goods—as Lowery, Lyons, and DeHoog did in their study in Kentucky and as they imply we should do in our work—is short-sighted. We suspect that their omission was motivated more by the fact that with two consolidated school districts as the venue for their research, they could not test the effects of education.

Furthermore, current research suggests that the findings reported by Lowery and Lyons (1989) are anomalous. The political science literature increasingly is focused on movers as a force in the local market for public goods. Recent literature indicates that even low-income people are aware of the quality of services provided by government and that this awareness affects their mobility (Blank 1985; Gramlich and Laren 1984; Peterson and Rom 1989). More generally, Sharp (1986) found that local service and tax reasons were the most prominent ones cited by movers in Kansas City. Percy and Hawkins (1992) found considerable evidence of Tiebout-like behavior