Bergstrom T C & Goodman R P. Private demands for public goods.
Amer. Econ. Rev. 63:280-96, 1973.
[Department of Economics, Washington University, St. Louis, MO]

A method was devised for estimating individual demand functions for local public goods from cross-sectional data on municipal expenditures and the distribution of individual characteristics in each municipality. Price and income elasticities and the degree of publicness of local public goods were then estimated. [The *Social Sciences Citation Index®* (*SSCI®*) indicates that this paper has been cited in over 145 publications since 1973.]

Theodore C. Bergstrom
Department of Economics
University of Michigan
Ann Arbor, MI 48109

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Before I began this paper, my main research interest was general equilibrium theory and its extension to economies with public goods. Public goods theory raises a vexing conundrum known as the *free-rider problem* — if individuals are taxed according to their stated marginal benefits from public goods, then it is in the interest of every consumer to understate his true evaluation. I was curious about whether one could deduce individual preferences for public goods from voting behavior under current institutions of local government, where a person's vote does not affect the share of the total cost of local public goods that he pays. This might have remained idle speculation had I not unthinkingly asked for a research assistant as part of a National Science Foundation grant. When the research assistant materialized as an able, enthusiastic student, Robert Goodman (who was to become coauthor of this study), I was bewildered. "How does an economic theorist use a research assistant?" Lacking an answer, I sent him out to see what data existed on local government expenditures in the US. He returned to announce that the US Census of Governments reports expenditures and revenues of essentially every incorporated municipal government in the US and that detailed economic and demographic data for municipalities appear in the US Census.

So we had impressive amounts of data.... The problem was to find a way to use these data to find what we wanted to know — demand functions for public goods as a function of individual characteristics like income and tax price and of community characteristics like population. Since our data were about community behavior rather than individual behavior, we would need a political theory that related demands of individuals to the community choice. We might then be able to deduce individual demand functions from observations of community choices and the distribution of individual characteristics in the community. We found a way to accomplish this by extending the "median voter theory" proposed by Bowen.[1] Our empirical estimates turned out to be plausible and consistent with standard economic analysis. Many studies have used similar methods to estimate demand functions for local public goods with different data sets, for different time periods, and for different countries. The results have been strikingly similar. Surveys of related work can be found in papers by Deacon;[2] Inman;[3] and Bergstrom, Rubinfeld, and Shapiro.[4]

It is likely that the article has been highly cited for the following reasons. First, it suggests empirical answers to questions that economists are curious about, e.g., the extent to which various "public goods" are congestible, the price and income elasticity of demand for public goods. Second, it offers a satisfying theoretical interpretation for empirical relations that economists had observed but for which they lacked adequate theory. Third, the ideas are easily understood and similar data are cheaply obtained. This makes it easy to replicate or elaborate upon our study using alternative data sets. Fourth, while the empirical results have been robust, the theory and empirical methods used are not the only possibilities and are by no means "the last word" on the subject. This has led to many published comments, criticisms, and extensions.

1. **Bowen H R.** The interpretation of voting in the allocation of economic resources. *Quart. J. Econ.* 58:27-48, 1943. (Cited 65 times.)
2. **Deacon R.** Private choice and collective outcomes: evidence from public sector demand analysis. *Nat. Tax J.* 30:371-86, 1977.
3. **Inman R P.** The fiscal performance of local governments: an interpretative review. (Mieszkowski P & Straszheim M, eds.) *Current issues in urban economics.* Baltimore, MD: Johns Hopkins University Press, 1979. p. 270-321.
4. **Bergstrom T, Rubinfeld D & Shapiro H.** Micro-based estimates of demand functions for local school expenditures. *Econometrica* 50:1183-205, 1982.

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