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School finance reform and voluntary fiscal federalism

Eric Brunner [a], Jon Sonstelie [b]

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Abstract

California has transferred the financing of its public schools from localities to the state. In response, many families have supplemented the tax revenue of their local public schools with voluntary contributions. This paper analyzes that phenomenon. We propose a model of partial cooperation among parents in making voluntary contributions to their public schools. Under reasonable conditions, the model predicts that contributions per pupil should decline with school size. We estimate this relationship using data on contributions to California schools. Our estimates reveal that contributions per pupil do decline with size; however, the rate of decline is surprisingly slow.

Introduction

Over the last 25 years, California has enacted a bold reform of its system for financing public schools. In essence, it has transferred the responsibility for funding its schools from localities to the state. Under local finance, each school district levied its own property tax rate. In its 1971 ruling in *Serrano v. Priest*, the California Supreme Court found this system unconstitutional because differences in the value of taxable property across districts caused inequities in tax revenue. The voters of California completed the transfer to state finance by passing Proposition 13, fixing the property tax rate at 1% throughout the state and giving the state legislature authority to allocate property tax revenue among local jurisdictions, including school districts. Armed with this authority, the legislature has achieved a more equitable distribution of revenue across districts, thereby satisfying the Court. However, California has not increased revenue per pupil as rapidly as other states. From 1970 to 1995, spending per pupil fell 15% in California relative to other states.

The combination of equalization across districts and the slower increase in average revenue has led to a relative decline in the funding of districts that fared well under local finance. Understandably, not all parents in those districts regard reform to be an improvement. It has taken away their authority to tax themselves

for their mutual benefit. From the perspective of these parents, government is now failing to provide a level of service for which they are willing to pay.

In response to this government failure, many parents have turned to collective action. In 1994, local educational foundations, PTAs, and booster clubs raised nearly $200 million for public schools. The level of contributions varied widely across school districts, creating a type of voluntary fiscal federalism. Can this voluntary fiscal federalism undo the equalization achieved by school finance reform? Olson (1965) has written eloquently about the difficulties of collective action. A group of individuals may have reason to pursue a common goal yet be unable to achieve it because cooperation is not in the self-interest of any one of them. Sandler (1992) has expanded Olson's analysis, delineating situations in which collective action may or may not be successful. Both Olson and Sandler emphasize the fundamental difference between individuals and groups. When an outcome would be beneficial, we may expect an individual to pursue it. The same cannot be expected from a group.

In the case of California's school finance reform, the importance of this distinction is best illustrated with a simple conceptual experiment. Firstly, suppose every school district is composed of just one family. Under local finance, each family is allowed to tax itself to provide the resources it demands for its children's education. Resources vary widely across districts because families differ in preferences and incomes. Now suppose that local finance is replaced by state finance, and the state taxes all families to provide equal revenue to each district. Although the reform equalizes government revenue across districts, families with high demand for school quality will supplement state revenue with their own contributions, yielding the same resources for their children's education as under local finance. In the end, families undo school finance reform through voluntary contributions.

Would they also undo reform if school districts are composed of 100 identical families instead of just one? Under local finance, each family is in exactly the same position as before. Using the authority of their local government, the families in each district will tax themselves to provide the same level of revenue per pupil as in the case of one-family districts. With state finance, and thus without local taxing authority, the situation could be very different. If families were to cooperate fully, each would be in the same position as under state finance with one-family school districts. If each were to contribute exactly the same amount as they would if they were in a one-family district, each would achieve exactly the same outcome. However, if families were to act only in their narrow self-interest, each attempting to free ride on the contributions of others, they would not achieve this outcome. It is now more difficult to undo reform.

How much free riding would there be? As we move from one family, where cooperation is trivial, to many families, where cooperation is difficult, how rapidly do contributions per pupil fall? How difficult is it to undo reform? That is the question that motivates this paper.

We propose a framework to investigate voluntary contributions that incorporates a notion of partial cooperation. In our model, some families cooperate fully in the provision of a public good, and others do not cooperate at all. The percentage who cooperate determines the price of school quality perceived by each cooperator. The more cooperators, the lower the price, and thus the higher are contributions to local schools. The partition of families between cooperators and non-cooperators is determined by the cost of cooperating and the cost of free riding. These costs are affected by the total number of families and thus the size of a school may affect total contributions.

We then apply this framework to data on contributions to California public schools. After estimating donations to a school as a function of its enrollment and other factors, we find that contributions do not rise proportionally with enrollment, which suggests that cooperation deteriorates as schools become larger. The

rate of deterioration is quite slow, however, so contributions can be significant even in large schools. Nevertheless, contributions are not large enough to substantially undermine school finance reform. Even when cooperation is substantial, as we observe, voluntary collective action is a poor substitute for the taxing authority of local government.[1]

Section snippets

A theory of voluntary contributions to local public schools

One model of voluntary contributions has been developed by Olson and Zeckhauser (1966), Warr (1983), Roberts (1984), and Bergstrom et al. (1986). In the model, individuals derive utility from a public good, and each may increase the amount of the good by making a voluntary contribution. In making a contribution, an individual is assumed to take the contributions of others as given.

Andreoni (1988) referred to this model as the 'pure altruism' model, drawing attention to the assumption that…

Data and methods for estimating the relationship between contributions and enrollment

Our data on contributions come from the Internal Revenue Service. Contributions to California schools are channeled through non-profit, tax-exempt organizations, which are required to file an IRS Form 990 if their income exceeds $25,000 in a year.[3] Each organization's income is publicly available on the IRS Master Business File. We used data from 1994.

Our task was to identify the non-profit organizations supporting California…

Estimates of the baseline model

Tobit estimates are reported in the first and third columns of Table 2. The coefficient on enrollment in the school-level regression is 0.48 with a standard error of 0.08. Similarly, in the district-level regression, the coefficient on enrollment is significantly less than unity. Contributions rise less than proportionally with enrollment, a pattern consistent with the deterioration of cooperation with increases in school size. Note, however, that both coefficients are significantly greater…

Modifications to the baseline model

While our baseline model is useful as a first analysis of the data, it also falls short in a number of areas. In this section, we address those shortcomings by examining the sensitivity of our results to two modifications of the baseline model. The first modification is to allow interaction between contributions at the school and district levels. Parents can contribute to either the PTA associated with their children's school or the educational foundation associated with the school's district.…

Conclusion

As several newspapers have discovered, contributions to California's public schools make a good story. In the typical article, an affluent neighborhood raises several thousand dollars for an array of educational services at its public school. Meanwhile, in a less affluent neighborhood, another school has no contributions and none of those services. The article describes California's school finance reform and its relatively low level of spending per pupil. Who can fault the affluent neighborhood …

Uncited references

Brunner, 1998; Chamberlin, 1974; Goetze et al., 1993; Isaac and Walker, 1988; Isaac et al., 1994; Lipford, 1995; McGuire, 1974; McGuire and Groth, 1985; Sandler and Murdoch, 1990; Zaleski and Zech, 1996…

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