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**LOCAL PUBLIC FINANCE  
(REVIEW ESSAY FOR *THE NEW PALGRAVE*, 2<sup>ND</sup> ED.,  
FORTHCOMING)**

By

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*Batch 53*

## **Local public finance**

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The mobility of consumers and producers in response to fiscal incentives gives the study of local public finance its distinctive character. Households and firms are partitioned into spatial units on the basis of preferences, costs and the incentives provided by local tax and expenditure policies. These fiscal incentives are, in turn, chosen by the members of each of these jurisdictions or clubs. Externalities within and between these localities greatly affect the efficiency of taxation and the provision of public goods and services.

Economic analysis of the taxation and expenditure policies of local public authorities has become far more sophisticated as theoretical enquiry has directed attention towards the uniquely local aspects of public finance and as national policies have increased the importance of the local public sector.

Many of the issues that arise in the analysis of the local public sector are familiar reflections of the important questions in public finance that have been addressed at the national level; for example, the incidence of taxation and the welfare losses from revenue instruments; the effect of government expenditures on consumer welfare and the distribution of well-being; the effect of public sector distortions on resource allocation and relative prices.

However, the principal difference between the economic analysis of public finance at the national and at the local levels is the potential for mobility among jurisdictions by the transport of final products and inputs, and especially by residents who finance local government and consume public output. Critically, this mobility may be endogenous to the revenue or expenditure actions taken by the local public authority, and this must be considered in any economic analysis of local finance.

This insight, as it affects efficiency in the allocation of local public output and the incidence of local taxes, goes back at least to the fifth edition of Marshall's *Principles* (1907, Appendix G). Marshall presented a lucid discussion of the effect of local public expenditures on residential mobility ('A high rate spent on providing good primary and secondary schools may attract artisan residents while repelling the well-to-do' (Marshall, 1920, p. 794)). He also noted the effects of mobility upon the incidence of local taxes.

Given the increased complexity of decentralized taxation and expenditure patterns when compared to national government policies, one may begin by asking which economic functions of government ought to be undertaken by the central (national) government rather than by local authorities. Consider the original Musgrave (1959) taxonomy of public sector functions: distribution, stabilization and allocation. It seems clear that a system of local taxes and expenditures is inappropriate for achieving distributional or stabilization goals. After the adoption of any system of taxation and redistribution by a locality, even one which reflects a unanimous view of the citizens, it will be in the interests of those bearing the burden of the tax to relocate in other jurisdictions and in the interests of potential beneficiaries of the redistribution to move into the jurisdiction. Similarly, locally adopted monetary and fiscal policies are unlikely

to further stabilization objectives, even if such objectives are uniformly held by local citizens. Import leakages are so large that the local benefits of stabilization policies (for example, local public employment programmes) are almost certain to be less than their costs.

It is precisely the mobility of households, goods and factors across jurisdictions that defeats local stabilization and redistribution policies. Conversely, however, the same 'openness' of the local economy means that the decentralized local provision of public goods will in many cases improve the allocative efficiency of the economy. In particular, the smaller and more homogeneous a community in a system of local government, the more likely is it that the provision of public goods by any community will be consistent with the demands of its citizens. In the limit, of course, if public goods are financed by a head tax, and if there are neither economies of scale in production nor externalities in consumption, then provision by a system of small jurisdictions, each with citizens of homogeneous tastes and incomes, will result in an efficient allocation.

If, however, there are economies of scale in production, it makes sense to have larger jurisdictions. But when the public good is produced by a larger entity, 'congestion' may result; that is, the quality of the good may decline as it is shared with more people. In larger jurisdictions, moreover, citizen demands may be more heterogeneous. The problem of balancing the benefits of cost-sharing in production, on the one hand, with the sacrifice in well-being by compromising individual consumers' demands or by introducing 'congestion' in public goods consumption, on the other, has been central to the normative analysis of the local provision of public goods.

Consider, for example, a ‘club’ providing some collective benefit to identical individuals (Buchanan, 1965). Suppose an organization supplies some public output  $Q$  subject to congestion, or equivalently, suppose it supplies a good whose standardized cost  $C(N)$  increases with population  $N$ . Individuals of income  $Y$  are assessed the average cost of service provision and allocate their remaining income to some numeraire good  $X$ . A community of  $N$  identical individuals will choose public output to maximize utility,  $U(Q, X)$ , subject to the individual budget constraint,  $Y = X + [C(N)/N]Q$ . This implies the familiar Samuelson (1954) condition:

$$N[(\partial U/\partial Q)/(\partial U/\partial X)] = C(N). \quad (1)$$

The level of public good provision is chosen by the club of fixed size  $N$  so that the *sum* of the individual marginal rates of substitution (MRS) between private and public goods equals the marginal rate of transformation (MRT) in production. Given this level of public output, from the budget constraint it also follows that choice of club size to maximize utility is:

$$C'(N) = C(N)/N. \quad (2)$$

The optimum size of the club is the membership at which the average cost of public output is equal to the marginal cost of adding another member. From equations (1) and (2) it follows that for a pure public good, that is,  $C'(N) = 0$ , the optimal size of the club is unbounded, while for a private good, where  $C(N) = PN$ , the *individual* MRS is equal to the MRT and the size of the club is indeterminate.

Applied to local public finance, the model indicates that a system of communities, each with identical individuals and of that size which minimizes average cost, would be a

stable and efficient mechanism for public service provision. Homogeneity of demands is necessary for efficiency even if the tax structure (or club dues) is of the Lindahl variety. Each group in a heterogeneous community would be better off by moving to a jurisdiction with identical tax shares.

Theoretical analyses of local public economies are much more complicated when the partitioning of individuals into political jurisdictions is ‘non-anonymous’, that is, when the characteristics of the other members (in addition to their incomes) matter to those in the club. In many cases, an equilibrium allocation of residents to jurisdictions may not exist at all (Scotchmer, 1997). As noted below, non-anonymous crowding may also affect the costs of public goods provision and the interpretation of demands for local public goods.

The ‘club’ model of the provision of local public goods is a special case of the so-called Tiebout (1956) model, probably the most influential idea in the modern analysis of local public finance. Tiebout’s stylized and informal analysis assumes that residential mobility is costless, that local jurisdictions provide public goods at minimum average cost and that local government is financed by non-distortionary lump-sum taxes. Under these circumstances, Tiebout argues that the provision of public goods by a system of competitive local governments may be no less efficient than the allocation of private goods by the market economy. The conclusion of this argument also depends crucially upon the availability to citizens of a sufficiently large number of jurisdictions offering differing packages of local public goods and upon the absence of interjurisdictional externalities, as well as more conventional assumptions about full information. In reality, in most metropolitan areas, local public output is supplied by a small number of

communities (small, at least, relative to the number of types of demanders); local mobility is quite costly and is motivated by many non-fiscal concerns. Individuals often live in one jurisdiction and work in another, and there are externalities among jurisdictions. Finally, revenues are raised, not by head taxes but by a variety of local levies, especially *ad valorem* taxes on real property. Each of these factors limits the economic efficiency of the local public sector in important ways.

The externalities or ‘spillouts’ of the benefits of public service provision mean that such goods will be underprovided without coordination by local communities – since each community will only consider the benefits accruing to its own citizens in choosing the level of service provision. For public goods and services with substantial spillouts of benefits, efficient levels of production can be stimulated by a system of open-ended matching grants to localities by the central government. As Pigou (1932) originally demonstrated, if the matching rate (the fraction of local spending reimbursed by higher government) corresponds to the fraction of local public output, which spills out to non-residents, then the externality will be internalized. It is, of course, rather difficult to implement this maxim of local public finance (Oates, 1972).

The heavy reliance upon local property taxes for financing the local public sector, especially in Britain, Canada and the United States, is another source of allocative inefficiency in local finance. Clearly, a property tax alters the housing consumption decision and leads to underconsumption of housing as well as to inefficiency in public goods consumption. Until rather recently the system of local property taxes was viewed as a system of excises (Netzer, 1966), regressive levies on property and housing consumption, in contrast to the original Henry George (1879) position on land taxes.

Modern theoretical analyses (following Mieszkowski, 1972), which assume that capital is mobile across jurisdictions and that the supply of capital is insensitive to its rate of return, have led to a reconsideration of the regressive nature of the tax. The inelastic supply of aggregate capital means that a national system of local property taxes will reduce returns to capitalists by the average level of the tax. The geographical mobility of capital implies that capital will flee from high-tax jurisdictions, raising marginal productivity and pre-tax returns, to low-tax jurisdictions, depressing pre-tax returns. Thus the incidence of the system of property taxes depends upon the magnitude of the average level of the tax, relative to the deviations from that average, as well as distribution of households among high-tax and low-tax jurisdictions. Despite the ambiguities in resolving these detailed empirical issues, this theoretical argument suggests that the burden of property taxation is heavily skewed towards the owners of capital. Empirically, this conclusion is probably modified by regressive appraisal and administrative procedures. It should be noted, moreover, that from local governments' perspective an increase in the level of the property tax to finance service provision is an excise on property users (since a change in any one community's property tax rate can have only a negligible effect on the average level of rates for the nation).

The distortion inherent in property tax financing may lead to local policies of exclusionary zoning. If, for example, the benefits of the local public sector were roughly equal per household, then it would be in the interests of current residents to force incoming households to consume more housing than the average household. Current residents may attempt to enforce this by imposing minimum lot-size restrictions or by other exclusionary practices to increase the housing consumption of newcomers. Of



course, as noted before, unless there are sufficient communities so that the households residing within a jurisdiction are literally identical, those who chose to consume less housing will typically enjoy a fiscal residual.

Despite these clear examples of allocative inefficiency in the system of local public finance and service provision, there is a substantial body of evidence that variations in property tax rates are reflected in property values and that variations in public services (for example, school quality) are capitalized into the sale prices of residential property. These findings are certainly consistent with the process of ‘voting with one’s feet’ implied by the Tiebout model, but the capitalization of taxes and services is not necessary to efficiency in local government, nor does efficient service provision necessarily imply capitalization.

The observation that individuals register their demands for publicly financed services in their choices of community has other important implications, however. Specifically, information about the public goods provided by different jurisdictions, together with information about the characteristics of the residents of those jurisdictions may be sufficient to identify consumer demands for public services. Extensive analyses of these issues have been undertaken, combining economic theories of the local political process with aggregate data on local public finance and choice of output. Under rather restrictive assumptions, the political process, which determines the level of service provision can be modelled as the choice of the median voter of the community. Given the characteristics of that individual (or rather, estimates obtained from aggregate information), the ‘tax price’ that individual confronts, and the level of public output chosen, the parameters of the demand curve are estimated econometrically. The ‘tax

price' is the marginal cost to the individual of purchasing an additional dollar of public output. With property tax financing, this is typically approximated by the median voter's house value as a fraction of the community's taxable real property per household.

As noted above, the residents of localities may 'care' about the characteristics of other residents simply because their characteristics affect the cost of producing public services. One example may involve local schools, which absorb the largest share of local government spending on public services. To the extent that peers 'matter' in the production of educational outputs in primary school, policies of matching grants to local governments based on disadvantaged residents are called for (see Nechyba, 2003). The specification of empirical models of the demand for local public services is much more problematic when the demographic characteristics reflect either tastes for public goods or the costs of supplying them, or both.

Nevertheless, the results of these empirical investigations have proven useful in the positive analysis of citizen demands for public services and in the analysis of local finance. Nevertheless, the underlying economic model of local government behaviour is open to questions, both technical (for example, the requirement that preferences exhibit single peakedness) and substantive (for example, the neglect of the role of bureaucracy in government decisions). For example, if the median voter determines the demand for local public output, then the propensity for a community to spend out of lump-sum aid from higher government ought to be no different from the propensity to spend out of income generated by local taxation. Yet empirical evidence suggests that the propensity of communities to spend out of untied grant income greatly exceeds the propensity to spend out of ordinary income. A variety of alternative models of local finance have been

espoused to help explain this ‘flypaper’ effect (‘money sticks where it lands’) in the context of bureaucratic decision-making. Chief among them are the so-called Leviathan models of a government that exploits its citizens by maximizing revenues extracted by taxation (Brennan and Buchanan, 1980). Clearly, however, more theoretical work needs to be done to resolve the contradictions between mobile consumers of local public output and sluggish suppliers.

Finally, it has been suggested that the inherent nature of local output and the traditional financing mechanisms of local government combine to exacerbate the economic and administrative problems of the local public sector (Baumol, 1967). Local output consists largely of labour-intensive services, where technical change is inherently slow, and is typically financed by income-inelastic tax instruments. Under reasonable demand conditions, these may produce a more or less continuous ‘crisis’ in local public finance, as service costs escalate more rapidly than revenue increments. Given these characteristics of the local financing mechanism, as well as the redistributive nature of many local services, there may thus be a strong case for revenue or tax-base sharing at the national level.

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*See also:* FISCAL FEDERALISM; PUBLIC FINANCE; PUBLIC GOODS; TIEBOUT HYPOTHESIS; URBAN ECONOMICS.

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