

LOCAL GOVERNMENT STRUCTURE AND PERFORMANCE: LESSONS FROM AMERICA?

GEORGE A. BOYNE

The debate in the UK on the reform of local government structure is poorly informed by empirical evidence. This article bridges part of the empirical gap by drawing upon analyses of structural effects in the USA. Two main dimensions of structure are outlined: fragmentation and concentration, both of which can vary vertically and horizontally. Fourteen structural hypotheses are identified and categorized as technical, competitive and political effects. The empirical evidence from the USA suggests that fragmentation is associated with lower spending and concentration is associated with higher spending. The implications of the evidence for structural reform in the UK are analysed. It is concluded that the creation of a single-tier system may not lead to greater efficiency, and that the advantages of a two-tier system have been underestimated.

INTRODUCTION

Local government in the UK is on the verge of widespread structural reform. The government and the main opposition parties are committed to the replacement of the predominantly two-tier system with a structure of unitary authorities in most areas (Department of the Environment 1991; Scottish Office 1991; Welsh Office 1992). The case for structural reform is based on the supposed advantages of a single tier: for example better service co-ordination, clearer accountability, more streamlined decision making and greater efficiency. However, opponents of reform can find equally plausible arguments that the new structure will produce none of these benefits (Boyne 1992(a)). The problem in resolving these arguments is that neither side can call upon much British evidence to support its case.

The lack of substantial structural variability in British local government precludes a thorough geographical comparison of the costs and benefits of alternative structures. In addition, the spatial variations in structure that do exist tend to overlap closely with other variables that influence local authority performance. For example, London and the six major English metropolitan areas have not only a distinct structure but also distinct fiscal, socio-economic and political circumstances. Thus it is very difficult to disentangle structural effects from the effect of other variables.

George A. Boyne is Reader in Public Policy in Department of Business and Administrative Studies at the University of Glamorgan.

Similarly, in Scotland the three unitary authorities are all islands with small populations, while in Northern Ireland the single tier of local government has so few functions that a comparison with the two-tier system in the rest of the UK would be of limited value.

Nor can historical analysis of British local government shed much light on the performance of alternative structures. In principle, the efficiency of the old county boroughs might be compared with the two-tier system which replaced them in 1974. However, there have been so many changes in the finance, role, responsibilities and political setting of local government since 1974 that the unique influence of structural change is likely to defy detection.

Thus, in the absence of good British evidence on the consequences of alternative structures, the aim of this article is to fill part of the 'empirical gap' in the reform debate by drawing upon studies of structure and performance in the USA. The local government system in the USA displays tremendous structural diversity, both across and within states. It thereby provides a large 'natural laboratory' for tests of the practical effects of different structures.

Part I of the article outlines the various dimensions of local government structure that may be subject to reform. Part II analyses the conflicting theoretical arguments on the impact of structural change on local service provision. Part III provides a summary and critique of the results of empirical studies of structure and performance in the USA. Part IV considers the lessons of this evidence for the reform of local government in the UK.

I DIMENSIONS OF LOCAL GOVERNMENT STRUCTURE

The current debate on local government reform in the UK is concerned with the relative merits of two-tier and single-tier systems. However the number of tiers is only one dimension of the structure of a local government system. It is also important to consider the number of units at each tier, and the distribution of responsibilities both within and between tiers.

The term *fragmentation* may be used to refer to the number of separate units in a local government system. In a fragmented structure there are many units in a geographical area, either in absolute terms or standardized for population. By contrast, in a 'consolidated' structure there are few units and in the extreme only one unit that covers a whole area.

Another dimension of local government structure may be termed *concentration*, which relates to the distribution of responsibilities and revenues. In a concentrated system, most functions and funds are located in a small number of authorities rather than widely dispersed. This dimension of structure is analogous to 'market share' in an industry: regardless of the number of local government units (fragmentation), market shares may be evenly distributed or highly skewed towards a few units (concentration).

Finally, the concepts of fragmentation and concentration can be applied either to the *vertical* or the *horizontal* structure of a local government system. Vertical structure relates to the number of tiers (vertical fragmentation) and the division of responsibilities amongst them (vertical concentration). Horizontal structure relates

to the number of units within a tier (horizontal fragmentation) and the dispersal of market share across the units (horizontal concentration).

Any combination of these vertical and horizontal structures may co-exist in practice. For example, the current local government system in the English shires and Wales displays limited vertical fragmentation (only two tiers); substantial vertical concentration (the counties have a highly dominant market share of 85 per cent of net revenue spending and are responsible for most of the major functions); limited horizontal fragmentation (there are few units in relation to the population served, especially at county level) and substantial horizontal deconcentration (councils within each tier have the same formal responsibilities, and the market shares of counties within a region or of districts within a county are fairly evenly spread).

Thus, in principle, reform proposals may be directed at any or all of the dimensions of local government structure. However, as will be seen below, the complexity of local government structure is often overlooked in theoretical arguments about reform and in empirical tests of the consequences of different structures. This is important because some theoretical arguments are valid only for either vertical or horizontal structure while others apply only to fragmentation or concentration. In addition, the interpretation of empirical evidence depends on the measure of structure that is tested.

II THEORETICAL EFFECTS OF LOCAL GOVERNMENT STRUCTURES

In the USA there has been a long-running debate on the effects of different structures on the performance of local governments (see Ostrom 1972). Many of the empirical studies analysed in Part III below contain detailed twists and turns on the basic theoretical arguments. However, in general, structural hypotheses can be divided into three main categories: technical effects, competitive effects and political effects. These structural hypotheses concern the *responsiveness* of local authorities to public preferences and the *efficiency* with which resource inputs are transformed into service outputs. In other words, appropriate structures can help to ensure that councils produce the right services at the right price.

(a) Technical effects

(i) *Economies of scale*

This argument concerns the effect of horizontal fragmentation and suggests that mergers of small units will produce economies of scale. If economies of scale are present in local service provision, then consolidation should be associated with lower costs and greater efficiency. Cost savings may result from the removal of administrative duplication (Lomax 1952), from the 'pecuniary gain' of lower input prices as a result of greater purchasing power (Shepherd 1990) or from greater scope for the use of sophisticated technical equipment when the appropriate scale threshold is reached. If this last source of savings is the most important, then economies of scale are likely to be more strongly associated with capital-intensive than labour-intensive services (Hirsch 1968).

Thus fragmentation may be inefficient because of the inability of small units to capture scale economies. However it should also be noted that if average cost curves are 'U' shaped then very large consolidated units will be subject to diseconomies of scale. Higher costs may arise because of the problems of delivering services to remote areas or because of 'bureaucratic congestion'. In this case both low and high fragmentation will be associated with higher spending and the optimum structure for efficiency may be somewhere in the middle, depending on the mix of services to be provided. It is, therefore, difficult to predict the consequences of consolidation unless the positions of the existing and new structural arrangements on the average cost curve can be identified. A negative relationship between scale and unit costs can be predicted only if it is assumed that all authorities are on the downward sloping portion of the average cost curve.

(ii) Economies of scope

This argument concerns the effects of vertical fragmentation and concentration. The term 'economies of scope', or 'economies of joint supply', refers to the advantages of providing a range of services in a single organization. Grosskopf and Yaisawarng (1990, p. 61) argue that local governments may be analogous to multiproduct firms where

economies of scope are said to exist if the cost of providing a diversified set of services is less than the cost of specialised firms providing those same services... the traditional source of economies of scope is through the 'sharing' of some inputs in the production of related goods or services, where these shared inputs are also often fixed.

In the case of local government, such fixed inputs which can be shared include computing facilities, central administrative staff and decentralized area offices.

Vertical fragmentation may prevent the realization of economies of scope and lead to higher costs. If services are divided between several tiers of authorities then problems of co-ordination and administrative duplication may exist. Economies of scope may be maximized if closely related services are provided at the same tier in a local government system, and if all services share some common overheads then full economies of scope will be attainable only in a single tier system. However, even in a multi-tier system economies of scope may be gained if services are concentrated at one level rather than dispersed equally between levels. Therefore while the potential importance of economies of scope suggests that vertical fragmentation will lead to lower efficiency, it also suggests that vertical concentration will lead to higher efficiency.

(b) Competitive effects

(i) Inter-area competition

Competition between areas may be motivated either by a concern to promote the local tax base or by ruling parties' concern to retain office. In either case, a horizontally fragmented local government system will enhance the level of competition

which in turn will produce increased responsiveness and efficiency in local service provision.

If an area is covered by a single large consolidated local government unit, then policy makers need have little fear that residents will relocate as a response to poor performance. As the geographical size of an area increases, so does the average cost of 'fiscal migration' to alternative local government units. By contrast, in a highly fragmented system, local authorities must compete for mobile businesses and households and seek to stave off migration by potentially mobile residents in their own area. If electors are unhappy with the ratio of tax costs to service benefits then they can 'vote with their feet' in search of a better package (Tiebout 1956). Thus good performance is required in a fragmented system to protect the local area from a 'fiscal stress syndrome', which consists of mutually reinforcing fiscal and socio-economic problems (Boyne 1988).

In addition, horizontal fragmentation may spur competition between the political leaders of neighbouring jurisdictions. Politicians may believe that their chances of re-election will improve if their authority is perceived as performing better than other authorities. Salmon (1987, p. 32) argues that in a fragmented system local governments are likely to engage in 'tournaments' in order to impress their residents, and that such tournaments are 'an incentive to do better than governments in other jurisdictions in terms of levels and qualities of services, of levels of taxes or of more general economic and social indicators'. Thus, even in the absence of fiscal migration, horizontal fragmentation may be associated with greater efficiency.

(ii) Inter-tier competition

In a single tier local government system each unit has a spatial monopoly on the whole range of local government services and on the local tax base. This may lead to inefficiency, either because all organizations have a natural tendency towards laxity in the absence of competition, or because bureaucrats are motivated by budget maximization (Niskanen 1971). In addition, Brennan and Buchanan (1980) argue that the public sector is a 'Leviathan' which is inherently biased towards extracting money from taxpayers, but that competitive government structures can minimize such exploitation.

These arguments imply that vertical consolidation and concentration will be associated with higher service costs. By contrast, in a multi-tier system with widely dispersed service responsibilities, each unit must compete for a share of local tax revenues by convincing voters that 'value for money' is being provided. In addition, the various units in a multi-tier system may provide a check on each other by threatening to expose extravagance or inefficiency.

(iii) Barriers to entry

In the private sector 'barriers to entry' in an industry are a means by which existing firms can prevent new firms from penetrating their market. Consumers may then be denied the benefit of more efficient production techniques. Within any given local government structure barriers to entry may be reduced by rules on 'compulsory competitive tendering'. In the context of the reform of local government

structure, the concept of barriers to entry refers to rules against the establishment of new authorities within the territory of existing authorities. Thus, rather than the impact of *actual* structures, it concerns the impact of the *potential* for extending fragmentation and reducing the level of concentration. The possibility that new units may be established means that the market for local services is 'contestable'. By contrast, if there is no such competitive threat to the market share of existing authorities then a pressure towards efficiency is lost.

(c) Political effects

(i) *Public scrutiny*

As the levels of consolidation and concentration in the local government system rise, so the capacity of the public to monitor policy makers' behaviour falls.

If the structure of local government is vertically fragmented and functions are widely shared between tiers, then the public may be able to see a clear connection between taxes paid to a unit and the services it provides. Taxpayers can then allocate their money to secure maximum value. By contrast, in a single tier system authorities can practice 'full-line forcing': in other words, the public must pay a set price for a whole line of services, regardless of their preferences for the components of the package. In addition, in a horizontally consolidated and concentrated system there are few opportunities for electors to acquire information on the tax costs and service benefits in other areas. As Schneider (1989, p. 615) argues 'while perfect information never exists, the local costs of gathering information will vary directly with the number and range of alternative suppliers in the local market for public goods'.

Thus a more fragmented and less concentrated structure is likely to facilitate public scrutiny and control and thereby exert downward pressure on service costs. If such a structure is to secure greater accountability in practice then it may be necessary to ensure 'separate billing' by each unit, rather than a combined tax bill for all units in an area. Barnett *et al* (1991, p. 37) find some evidence that when 'ratepayers receive one rate bill determined by the expenditure decisions of at least two local authorities, there is a clear possibility that authorities responsible for a low proportion of the total rate bill have little incentive to control expenditure'.

(ii) *Demands for spatially divisible services*

This argument concerns the effect of horizontal fragmentation on public demands for services that benefit specific localities. Such 'divisible' goods include council housing and schools which primarily benefit residents within local boundaries rather than residents of neighbouring authorities or commuters.

In a consolidated system, services will be provided over a wide area that contains many local communities with varying preferences. Local residents may have little confidence that their neighbourhood will receive a fair share of services in return for taxes paid, or that the services provided will suit their specific needs. Thus consolidation will suppress the demand for public services. By contrast, in a fragmented system voters will demand more services and be prepared to pay higher

taxes, safe in the knowledge that the appropriate services will be provided. According to Baird and Langdon (1972) this positive effect of horizontal fragmentation on service provision is especially likely to occur under two circumstances. First, when preferences vary widely across local areas, and second when such services are financed by earmarked taxes which maximize public confidence that money will be allocated as intended.

An additional reason why fragmentation may lead to higher service demands is that there will be less pressure towards 'exit' from public provision to private suppliers. Thus Sjoquist (1982, p. 79) argues that

In areas with a single jurisdiction, and hence no public sector alternatives, an individual who desires more of a government good may seek a private sector alternative, for example a private school. As the number of public sector options increases, that same individual may find a jurisdiction with a desirable level of the government good and hence give up the private sector alternative, thus increasing the level of public expenditures.

A contrary view is that the consolidation of small units will lead to higher demands for spatially divisible services because of log-rolling and 'pork-barrel' politics. Thus Giertz (1981, p. 121) argues that

the tendency to promote projects of special interest at the expense of taxpayers in general would be most pronounced in a centralised system... (if) local issues are dealt with at the central level, local areas are likely to lobby very strongly for projects that would never be funded at the local level.

Thus the impact of horizontal fragmentation on demands for divisible services depends on the relative magnitude of the contradictory effects of public confidence in small units and log-rolling in large units.

(iii) Demands for spatially indivisible services

Services that are spatially indivisible provide benefits over a wide geographical area. In a horizontally fragmented system the provision of services such as public libraries by an urban authority has positive externalities for neighbouring communities. Thus fragmentation may restrain service provision below an 'optimal' level because 'suburban resources are not made available to help finance the public services... (and) there is no mechanism for including the preferences of suburbanities in the public sector decisions of central cities' (Cowing and Holtman 1976, p. 24). The higher the degree of fragmentation, the more boundaries there are between authorities and the more demand for spatially indivisible services is suppressed. As Adams (1965, p. 403) argues 'the balkanisation of a county area leads to an undervaluation of social benefits by each political unit because of benefit spillovers and thus to an underallocation of resources'. In addition, some services may hardly be provided at all unless small units are consolidated into a geographically large authority. For example, Gustley (1977, p. 353) argues that 'the existence of substantial benefit spillovers from air pollution control programmes usually results in minimal expenditures for this service under a fragmented system'.

(d) Summary

The theoretical implications of alternative local government structures are complex and contradictory. While technical effects suggest that consolidation and concentration will bring efficiency savings, competitive effects suggest the opposite. Political effects suggest that pressures towards efficiency will be lower in systems that are concentrated and consolidated. The impact of different structures on the level of service demands is also mixed: consolidation may either impair or improve the capacity of local authorities to respond to 'true' public preferences.

TABLE 1 The effect of structure on spending

<i>Structural dimensions</i>	<i>Spending effects</i>
VERTICAL FRAGMENTATION:	
Loss of economies of scope	higher
More inter-tier competition	lower
More public scrutiny	lower
VERTICAL CONCENTRATION:	
Gains from economies of scope	lower
Less public scrutiny	higher
HORIZONTAL FRAGMENTATION:	
Loss of economies of scale	higher
More potential for fiscal migration	lower
More inter-area tournaments	lower
More public scrutiny	lower
More public confidence in service benefits	higher
Less scope for log-rolling	lower
Less demand for indivisible services	lower
HORIZONTAL CONCENTRATION:	
Less public scrutiny	higher
BARRIERS TO ENTRY:	
Market not contestable	higher

All theoretical arguments on efficiency and responsiveness have implications for the level of local government spending. In table 1 these expenditure effects are summarized under the various dimensions of local government structure. In total there are 14 structural hypotheses, seven of which relate to horizontal fragmentation. The only unambiguous predictions are that barriers to entry and horizontal concentration will lead to higher spending. The two hypothetical effects of vertical concentration are directly contradictory. Both vertical and horizontal fragmentation are associated with a mix of positive and negative effects. Most of the hypotheses for these aspects of structure imply lower spending, but the theoretical arguments are silent on the specific magnitude of the expenditure effects.

Therefore it is impossible to predict a priori the net result of the contradictory

effects, and it is necessary to turn to empirical evidence to discover the consequences of structural variation in practice.

III EMPIRICAL TESTS OF STRUCTURAL EFFECTS

(a) Local government in the USA

There are over 83,000 units of local government in the USA (see table 2). This is an average of one unit per 2,700 people, with a range from one unit per 235 people in North Dakota to one unit per 45,700 people in Hawaii (Chicoine and Walzer 1985). Around 20,000 units in the USA perform only minor functions (Anton 1988) and are effectively similar to parish, town and community councils in the UK. Even discounting these units, the US figure is well below the English average of 115,000 people per local authority. Local governments in the USA spend almost 8 per cent of GNP, which is roughly 22 per cent of total public expenditure (Dye 1990). The distribution of local spending between multi-purpose and single-purpose local governments is shown in table 2.

TABLE 2 Local government in the USA

	<i>number</i>	<i>% of total units</i>	<i>% of local spending</i>
Counties	3,041	3.6	22.8
Municipalities	19,205	23.1	32.3
Townships and towns	16,691	20.1	3.5
School districts	14,741	17.7	36.4
Special districts	29,487	35.5	5.1

Sources: Chicoine and Walzer (1985); Dye (1990)

There are three types of multi-purpose local government units. First, counties which act on behalf of the state in the administration of justice and provide services such as fire, health and economic development. Second, municipalities which cover around two-thirds of the population and provide the whole range of local government services. Third, towns and townships which generally provide a narrower range of services including roads, bridges, sewerage and water. The two types of single-purpose local governments are school districts which provide only education, and special districts which provide any one of a large number of services. The most common special district functions are fire, water supply, housing and urban renewal, drainage, sewerage and cemeteries. Both multi-purpose and single-purpose units are elected and have tax raising powers, although the latter may be circumscribed by the state unless 'home rule' has been granted.

Under the US constitution each state has the power to establish and alter its own local government system. Thus local governments are formally subordinate to the state government in much the same way that local authorities are legally subordinate to central government in the UK. However, this does not mean that there is a uniform local government system in each state. Local government structures vary not only across counties within a state but also from one part of

a county to another. In different areas a service may be provided at different geographical scales and by multi-purpose or single-purpose governments. Some county residents live in a township while others live in a municipality; other residents live in an area covered by both a township and a municipality, although the two jurisdictions may not be coterminous. In some areas education is provided by a school district while in other areas education is part of the portfolio of a multi-purpose unit; some residents receive services from a variety of special districts while other residents are served by a consolidated governmental unit. In addition to this geographical variety, the structural pattern changes year by year as some units merge or are annexed by their neighbours and as new units are established through local referenda (Anton 1988).

The American local government system may be viewed as a very complex jigsaw. However it is better described as a kaleidoscope, with overlapping units of varying sizes and functional responsibilities. The peak of this complexity is reached in the urban 'Standard Metropolitan Statistical Areas' (SMSAs). Chicoine and Walzer (1985, p. 25) note that 'a typical metropolitan area has 85 units of government, including 2 counties, 13 townships, 21 municipalities, 18 school districts and 31 special districts'. This awesome institutional variety reflects a history of local choice and experiment in the design of local government structures. It is to the results of these experiments that we now turn.

(b) The empirical evidence

The theoretical arguments summarized in Part II above concern the impact of local government structure on public *demands* and the *efficiency* of service provision. However, empirical studies of structural effects in the USA have concentrated not on demands or efficiency but on *spending*. This adds further complexity to the interpretation of structural effects that are already plagued by theoretical ambiguity. Higher demands should lead to higher spending and greater efficiency should lead to lower spending, but neither structural effect is measured directly in the empirical studies. However, when estimating structural effects most studies control for various demand proxies such as local incomes and demographic characteristics. Thus it may be argued that structural variables reflect only efficiency effects and not demand effects.

The absence of a direct focus on efficiency, in the strict sense of the ratio of inputs to outputs, reflects the difficulty of defining and measuring this concept in the context of local services. The main problems concern the identification of unit costs and the measurement of comparable units of service quantity and quality across local government areas (see Whynes 1987; Barrow 1990). Inferences on efficiency can be drawn directly from evidence on expenditure only if it is assumed that variations in output quantity and quality are not related to variations in spending. There is substantial evidence that the relationship between service outputs and spending levels is generally weak (for example, Sharkansky 1967; Hinkley and Marquette 1983). Thus the inferential gap between structural effects on spending and structural effects on efficiency may be tolerably small, particularly when account is taken of the effect of other expenditure 'determinants'. A multitude of

studies in the US and UK have established that local spending decisions are influenced by variables such as service needs, local resources, inter-governmental grants and local political ideology. Thus it is important to take account of such variables when estimating structural effects. All of the studies summarized below control for at least some of these other influences on spending. Results derived from bivariate analyses are omitted because they are not only methodologically crude but also likely to be substantively misleading.

The results of the empirical analyses of structural variations are summarized in tables 3 to 9. Where studies present results for different services or time periods the general pattern of the evidence is indicated in the tables. Most of the empirical analyses are cross-sectional and estimate the statistical relationship between variations in structure and variations in spending per capita, or per client, or spending as a percentage of local incomes. The analyses are usually conducted across states, SMSAs or counties within a state. The dependent variables are either spending by all local units within an area (for example, a state or a county) or spending by individual units (for example, municipalities or special districts).

Three caveats concerning the studies should be noted before turning to the detailed evidence. First, the empirical analyses are prone to a number of methodological problems that are common in cross-sectional studies of expenditure variation (Boyne 1985). However, the effect of the structural variables is sufficiently consistent to warrant reasonable confidence in the statistical results. Second, it is important to remember that the empirical evidence relates not to individual structural hypotheses but to the net effect of a dimension of structure on spending. Thus a positive or negative relationship between structure and expenditure neither directly supports nor undermines any single structural hypothesis. Similarly, an insignificant result does not suggest that all the structural hypotheses are invalid: the positive and negative effects of a dimension of structure may simply be cancelling out. Nevertheless, the evidence does indicate the *net* effect of structure on spending, even if it may be difficult to trace the sources of this net effect. Third, all the studies reflect the 'mainstream' model of industrial economics which assumes that structure determines performance, rather than vice-versa (Shepherd 1990). If this assumption is invalid then the evidence may overstate structural effects.

(i) Horizontal fragmentation

The results of analyses of this dimension of structure are summarized in table 3. The most common measures of horizontal fragmentation are the absolute number of units in a tier of local government and the number of units per capita. Of the 20 tests conducted, 11 indicate that the relationship between horizontal fragmentation and spending is negative, 5 indicate that it is positive and 3 indicate that it is insignificant. The remaining two tests by Zax (1988) suggest that the relationship is non-linear.

The variation in the evidence across studies largely reflects the type of local government units that are analysed. Results for multi-purpose governments generally show a negative relationship between fragmentation and spending. This may indicate greater efficiency because, as Martin and Wagner (1978, p. 411) argue,

TABLE 3 Results of tests of horizontal fragmentation

<i>Study</i>	<i>Dependent variable and local government units</i>	<i>Measure of horizontal fragmentation</i>	<i>Effect of fragmentation on spending</i>
Baird and Langdon 1972	Spending by school districts and municipalities in the central county of 89 SMSAs	(a) School Districts per county (b) Municipalities per county	Higher Insignificant
Wagner and Weber 1975	Spending by all units in 164 counties in 16 southern states	Absolute number of municipalities	Lower
Mehay 1981	Spending by 159 cities in California	Extent of annexation of neighbouring areas.	Lower
Chicoine and Walzer 1985	Spending by school districts and special districts in 101 Illinois counties.	(a) School Districts per capita (b) Library Districts per capita (c) Park Districts per capita	Higher Higher Insignificant
Nelson 1986	Combined taxes of state and localities, 49 states	Counties per capita	Lower
Schneider 1986	Spending by 747 suburban municipalities in 46 SMSAs	Suburban municipalities per capita in the SMSA	Lower
Bell 1988	Total education spending per pupil, 48 states.	School districts per square mile	Lower
Forbes and Zampelli 1989	Taxing and spending by 345 counties in 157 SMSAs	Absolute number of counties in the SMSA	Higher
Zax 1988	(a) Ratio of spending to income, all units in 3129 counties	(a) Absolute number of school districts (b) School districts per capita. (c) School districts per \$m. of spending.	Insignificant Higher Lower
	(b) Spending by municipalities in 3129 counties	(a) Absolute number of cities per county. (b) Cities per capita in each county. (c) Cities per \$m. of spending in each county.	Lower Non-Linear: Higher, Lower Non-Linear: Lower, Higher

Schneider 1989	Spending by 839 suburban municipalities in 39 SMSAs.	(a) Absolute number of suburban municipalities in the SMSA	Lower
		(b) Number of other municipalities bordering the municipality.	Lower
		(c) Dispersion of tax prices across suburban municipalities.	Lower
	Ratio of municipality spending to income, 218 SMSAs.	Municipalities per capita in the SMSA.	Lower

TABLE 4 Results of tests of vertical fragmentation

<i>Study</i>	<i>Dependent variable and local government units</i>	<i>Measure of vertical fragmentation</i>	<i>Effect of fragmentation on spending</i>
Wagner and Weber 1975	Spending by all units in 164 counties in 16 southern states.	Whether education provided by the municipality or a school district.	Higher in small counties. Lower in large counties.
Mehay 1984	Spending by 300 fire agencies and 82 park agencies in California.	Whether fire and park services are provided by independent districts.	Lower

state governments generally permit the creation of new municipalities 'only if the provision of public services in the proposed city would equal or exceed that which is being provided by the county. To reduce the provision of public services is not generally considered an appropriate ground for incorporation'. Studies which do not find a negative relationship between spending and the fragmentation of multi-purpose units tend to display methodological problems. For example, Baird and Langdon (1972) find that the number of municipalities per county is not related to spending, but the evidence is suspect because the analysis omits the effect of cross-county competition in a SMSA (Sjoquist 1982). Similarly, Zax finds that the effect on spending of jurisdictions per county is non-linear: spending is minimized at 290 jurisdictions but then grows. However only five counties in the USA contain more than 290 jurisdictions, so the impact of fragmentation is negative across virtually the whole range of existing structures.

The results for single-purpose units of local government show little sign that horizontal fragmentation reduces spending. For example, Chicoine and Walzer (1985) find that the number of independent special districts is associated with higher library district spending and has no significant effect on park district spending. Zax (1988) finds three different results using three different measures of school district fragmentation (see table 3).

There are at least two reasons why horizontal fragmentation reduces the spending of multi-purpose units but not single-purpose units. First, the services provided by special districts may be more capital intensive than those provided by multi-purpose units, and therefore horizontal fragmentation may be associated with the loss of economies of scale. This would not explain however, why spending on the labour intensive services provided by school districts generally shows either a positive or insignificant relationship with fragmentation. Second, fiscal migration may occur across multi-purpose units but not single-purpose units. A move across the boundaries of a special district or school district may yield an improvement in only one service, which may be insufficient to trigger fiscal migration. Thus it is possible that single-purpose units are immune from the threat of relocation by households and businesses, and that they are therefore less susceptible than multi-purpose units to the competitive pressures of fragmentation.

(ii) Vertical fragmentation

There is little empirical evidence on the consequences of this aspect of structure (see table 4). An 'ideal' test of vertical fragmentation would examine the effect of variations in the number of local government tiers. The two empirical studies of vertical fragmentation provide only a 'partial' test because they focus on the separate provision of specific services rather than the whole range of services in an area. Wagner and Weber (1975) suggest that the provision of education by separate school boards is associated with lower spending in large counties but higher spending in small counties. They argue that in small counties economies of scope are sacrificed if education is provided separately, but that in large counties the loss of economies of scope is outweighed by the gain from greater public scrutiny. Mehay (1984) finds that vertical fragmentation is associated with lower spending

on fire and parks services. He argues that greater efficiency in independent special districts results from greater public scrutiny. By contrast 'considerably more bureaucratic discretion is exercised by managers of districts that are adjuncts of large, general purpose governments' (Mehay 1984, p. 346).

(iii) *General fragmentation*

Many tests of structural effects combine the horizontal and vertical dimensions of fragmentation by measuring the total number of local government units in a county, SMSA or state. Other studies measure the total number of either multi-purpose or single-purpose governments. The results of these studies are especially difficult to interpret because the net effect of general fragmentation is the sum of horizontal and vertical effects.

Table 5 shows that the 25 tests of the relationship between general fragmentation and spending produce mixed results: 7 show a negative effect, 6 a positive effect, 9 are insignificant and 3 are non-linear. However, as in the case of horizontal fragmentation, the results are strongly linked to the type of units analysed. Thus the majority of tests of the fragmentation of multi-purpose units find a negative relationship with spending; all the tests of the fragmentation of special districts find a positive or insignificant relationship with spending; and the 12 tests which examine the fragmentation of all types of local units are equally divided between positive, negative, insignificant and non-linear results. The underlying pattern in the evidence can be seen most clearly in studies which examine the fragmentation of both multi-purpose and single-purpose units (for example, Nelson 1987; Eberts and Gronberg 1988).

Another pattern in the evidence is that 6 of the 7 studies which conduct tests of fragmentation at the state level find that the effect on spending is insignificant (see table 5). This raises the interesting but neglected issue of the definition of a geographical 'market' in local services. Zax (1989, p. 561) argues that 'citizens who are dissatisfied with local public services are typically unwilling to change their jobs and social circles in order to change their service consumption. The mobility which disciplines monopolizing local public officials will therefore occur largely among nearby communities'. Thus the competitive forces associated with fragmentation may be strong at the county and SMSA levels but weak over an area as wide as a state.

(iv) *Horizontal concentration*

There is little discussion of the appropriate measurement of 'concentration' in the empirical studies. Most analyses focus on the distribution of spending and revenues, but other measures of market share include population, land area and housing stock (see Fischel 1981).

The theoretical effect of horizontal concentration is less public scrutiny of local government performance and therefore less efficiency and higher spending. Only two studies have tested this hypothesis (see table 6) and the only significant result suggests that horizontal fragmentation is associated with lower spending. However this evidence relates to the effect of central city population on spending by suburban

TABLE 5 Results of tests of general fragmentation

<i>Study</i>	<i>Dependent variable and local government units</i>	<i>Measure of general fragmentation</i>	<i>Effect of general fragmentation on spending</i>
Adams 1965	Spending by all units in 478 counties in 45 states.	Absolute number of municipalities and townships per county	Lower
Baird and Langdon 1972	Taxes of all units in the central county of 89 SMSAs.	Absolute number of units per county	Higher
Isserman 1976	Spending by all units in 21 New Jersey counties.	Absolute number of units per county	Lower
Sjoquist 1982	Spending by 47 central cities in southern SMSAs.	Absolute number of units in the SMSA	Lower
Chicoine and Walzer 1985	Spending by all units in 101 Illinois counties.	Units per capita in each county	Higher
Oates 1985	Combined spending of state and localities, 50 states.	Absolute number of units per state	Insignificant
Nelson 1986	Combined taxes of states and localities, 49 states.	Special districts per capita	Insignificant
Nelson 1987	Spending by all units, 50 states.	(a) Multi-purpose units per capita (b) Special districts per capita	Lower Insignificant
Eberts and Gronberg 1988	Spending by all units in 2,900 counties in 280 SMSAs in 50 states.	(a) Multi-purpose units: absolute number, number per capita, per square mile. (b) single-purpose units: absolute number, number per capita, per square mile.	Insignificant at state level; Lower at SMSA, county level Insignificant at state level Higher at SMSA, county level
Zax 1988	Ratio of spending to income, all units in 3129 counties.	(a) Absolute number of units. (b) Units per \$m. spending. (c) Units per square mile. (d) Units per capita	Non-Linear: lower, higher Non-Linear: lower, higher Insignificant Non-Linear: higher, lower
Zax 1989	Ratio of revenues to income, all units in 3,022 counties.	(a) Units per capita: multi-purpose, special purpose. (b) Units per square mile: multi-purpose, special purpose.	Higher Lower Insignificant
Dolan 1990	'Cost' of all units in 102 Illinois counties.	(a) Absolute number of units. (b) Units per capita.	Higher Lower
Eberts and Gronberg 1990	Ratio of spending to income, all units in 218 SMSAs.	Non-municipal units per capita.	Insignificant
Joulfaian and Marlow 1991	Combined state and local spending.	Absolute number of units.	Insignificant

TABLE 6 Results of tests of horizontal concentration

<i>Study</i>	<i>Dependent variable and local government units</i>	<i>Measure of horizontal concentration</i>	<i>Effect of concentration on spending</i>
Schneider 1989	Spending by 839 suburban municipalities in 39 SMSAs.	Coefficient of variation of suburban municipality spending in each SMSA	Insignificant
Eberts and Gronberg 1990	Ratio of municipality spending to income, 218 SMSAs.	(a) Largest four suburbs' share of total population. (b) Central city share of SMSA population.	Insignificant Lower

TABLE 7 Results of tests of vertical concentration

<i>Study</i>	<i>Dependent variable and local government units</i>	<i>Measure of vertical concentration</i>	<i>Effect of concentration on spending</i>
Gustley 1977	Spending by 25 municipalities in Florida.	Extent of service transfers to metro-wide unit.	Higher
Giertz 1981	Combined spending of state and localities, 50 states	State share of state-local taxes and spending.	Higher
Oates 1985	Combined spending of state and localities, 50 states.	State share of state-local revenues and spending.	Insignificant
Nelson 1986	Combined taxes of state and localities, 49 states.	State share of state-local taxes.	Lower
Wallis and Oates 1988	Combined tax and spending of state and localities, various samples.	State share of state-local revenues and spending.	Higher
Forbes and Zampelli 1989	Taxes and spending by 345 counties in 157 SMSAs.	State share of state-local revenues and taxes.	Lower
Zax 1989	Ratio of revenues to income, all units in 3022 counties.	County share of total local government revenues.	Higher
Joulfaian and Marlow 1991	Combined spending of state and localities, 50 states.	(a) State share of state-local spending. (b) State-local share of federal, state and local spending.	Insignificant Higher

municipalities. Thus the result probably reflects the savings to suburbs from central city service provision, and does not imply that horizontal concentration is associated with lower spending across all local units in a SMSA.

The small number of tests imposes great constraints on the conclusion that can be drawn, but it seems that horizontal concentration has little net effect on spending. The explanation may simply be that while horizontal concentration makes public scrutiny of units with large market shares more difficult, this effect is offset by easier scrutiny of units with small market shares.

(v) Vertical concentration

A 'pure' measure of vertical concentration would consider the distribution of the share of total local services among the tiers which cover a given geographical area. However this measure is virtually impossible to apply in the USA because the various layers of local government are not geographically coterminous. Therefore it is difficult to isolate the vertical concentration effects of scope economies and problems of public scrutiny.

Most studies of vertical concentration analyse the relationship between the state's share of the state-local market and the combined spending of state and local units. These empirical studies thereby conflate vertical concentration effects with economies of scale, and with disincentives towards fiscal migration which arise from the high market share of the geographically large upper tier. Even the studies that focus on the county share of the local market suffer from the same problem: counties are larger than their constituent local units, and therefore a measure of vertical concentration picks up pressures towards lower spending (economies of scope and scale) and higher spending (scrutiny problems and disincentives to fiscal migration).

The empirical results in table 7 suggest that vertical concentration is associated with higher spending: 5 of the 9 tests indicate a positive relationship between concentration and expenditure and only 2 tests indicate a negative relationship. In addition, Forbes and Zampelli's (1989) evidence that state market share has a negative effect on county spending may be discounted. If the expenditures of the two levels of government are substitutes then there is an inherent negative relationship between the measure of concentration and spending.

(vi) General concentration

Studies which measure general concentration focus on the distribution of market share across all units in a local government system. The three empirical tests of the effect of this aspect of structure analyse fiscal concentration within counties (see table 8). As noted above, horizontal concentration may have little net effect on local spending. Thus the impact of general concentration should reflect the vertical effects of gains from economies of scope and losses from lower public scrutiny. The tests of general concentration take all units into account, unlike the tests of vertical concentration which focus on the market share of the top tier. Thus the evidence on general concentration may not be contaminated by the effects of scale and fiscal migration.

TABLE 8 Results of tests of general concentration

<i>Study</i>	<i>Dependent variable and local government units</i>	<i>Measure of general concentration</i>	<i>Effect of concentration on spending</i>
Dilorenzo 1983	Taxes and spending of all units in 65 counties.	4 largest units' share of taxes and spending.	Higher
Chicoine and Walzer 1985	Spending by all units in 101 Illinois counties.	Fiscal concentration across all units.	Lower
Dolan 1990	'Cost' of all units in 102 Illinois counties.	Standard deviation of spending across all units.	Lower

TABLE 9 Results of tests of barriers to entry

<i>Study</i>	<i>Dependent variable and local government units</i>	<i>Measure of barriers to entry</i>	<i>Effect of barriers on spending</i>
Martin and Wagner 1978	Spending by all units in counties in 4 states.	Barriers against new municipalities	Higher
Dilorenzo 1981	Spending by all units in counties in 5 states.	Barriers against new special districts	Higher

The results of two of the three studies suggest that vertical concentration is associated with lower spending, and therefore imply that scope effects outweigh scrutiny effects. However, Dolan's measure of the dispersion of market shares, the standard deviation of expenditures, is tautologically correlated with the level of expenditure (see Boyne 1992b). Thus the remaining valid evidence is equally balanced between positive and negative effects.

(vii) Barriers to entry

The small amount of empirical evidence on the effect of barriers to entry supports the hypothesis that an 'uncontestable' local government market is associated with higher spending. There are two explanations for this effect. First, the absence of a competitive threat from potential new units may reduce the efficiency pressures on existing units. Second, the actual formation of new units may reduce costs because of the increase in horizontal fragmentation. However, the fragmentation of only multi-purpose units is associated with lower spending, while barriers to entry influence spending by both multi-purpose and single-purpose units (see table 9). Therefore it may be concluded that it is the effect of barriers to entry on the behaviour of existing units which explains the positive relationship with spending.

(viii) Summary

Four main points emerge from evidence on the effect of variations in local government structure in the USA. First, the horizontal fragmentation of multi-purpose governments leads to lower spending. Second, local government units compete in a market which is geographically limited: competition between units is present at a relatively small spatial scale but not across wide areas. Third, the vertical concentration of market share in large 'top tier' units is associated with higher spending. And finally, the establishment of barriers to entry is positively related to expenditures by the local government units that are protected by the barriers.

In sum, the broad pattern of the evidence suggests that lower spending is a feature of fragmented and deconcentrated local government systems. By contrast, consolidated and concentrated structures tend to be associated with higher spending. This implies that the technical benefits of large units with big market shares, such as economies of scale and scope, are outweighed by competitive and political costs, such as disincentives towards fiscal migration and problems of public scrutiny.

IV IMPLICATIONS FOR LOCAL GOVERNMENT REFORM IN THE UK

In this section the government's proposals for the reform of British local government are analysed in the light of the evidence on structure and performance in the USA. The specific magnitude of the expenditure effects of different structures is unlikely to transfer directly across the two political systems. However, as Rose (1991, p. 21) notes, in 'lesson drawing' across nations 'details of foreign practice can distract attention from essentials, and confuse what is generic and potentially transferrable from what is specific to time and place'. Thus in applying the American evidence to the British context it is simply necessary to assume that the general direction

of structural effects is likely to be similar. This assumption may be justified on the basis that local policy makers in the UK and US face increasingly similar circumstances (Hambleton 1990).

There is already a single tier of elected local government in London and the six metropolitan areas in England. The current proposals for reform seek to extend this system of unitary authorities to the rest of England, Wales and the Scottish mainland. Thus the 'base-line' for evaluating the proposed unitary structure is the existing two-tier structure in these areas.

(a) Vertical effects of unitary authorities

A single tier of authorities, consisting of either the current counties or districts, would remove the vertical fragmentation in the existing system and produce complete vertical concentration. In theory, this structural change should yield efficiency gains from economies of scope, but losses from the absence of inter-tier competition and problems of public scrutiny. On the basis of the American evidence, the effect of economies of scope is outweighed by the competitive and political effects. Thus it may be concluded that the vertical consolidation and concentration of all functions in a single tier of councils is likely to impair the technical efficiency of the local government system.

(b) Horizontal effects of unitary authorities based on county boundaries

The transfer of district functions to counties would substantially reduce the extent of horizontal fragmentation in the structure of local government and the provision of local services. The hypothetical effects of this structural change are an increase in efficiency because of economies of scale, but a decrease in efficiency because of less potential for fiscal migration, fewer inter-area tournaments and less effective public scrutiny. Analyses of structural effects in the USA suggest that any benefits from economies of scale are more than offset by competitive and political costs.

The supposed importance of economies of scale was a major technical argument in favour of local government reorganization in the 1970s (Dearlove 1979). However the 'evidence' in support of economies of scale in the pre-1974 local government system is at best inconclusive (Newton 1982). The arguments for economies of scale in the 1990s are even less persuasive. First, the 'enabling' role of local authorities implies that services can be purchased from suppliers operating at minimum efficient scale, regardless of the scale of an authority itself. Second, economies of scale are most likely to be realized in the bulk production of standardized services, which is inappropriate in a 'post-fordist' local government culture that emphasizes differentiated products (Stoker 1989). Thus, in the absence of savings from economies of scale, it may be concluded that unitary authorities based on county boundaries will lead to lower efficiency.

(c) Horizontal effects of unitary authorities based on district boundaries

Under this option, all county functions would be transferred to existing districts, thereby increasing the horizontal fragmentation of the provision of county services. If the main role of councils is to 'enable' the provision of differentiated products,

then it may be assumed that this will result in little loss of economies of scale, especially in labour intensive services such as education. By contrast, the provision of these services at a smaller spatial scale may result in greater competitive pressures from fiscal migration. While geographical mobility is less marked in the UK than the US, there is evidence that local policies influence the movement of both businesses and population across local authority boundaries (see Cuthbertson *et al* 1982; Grippaios and Brooks 1982). In addition, efficiency gains may result from inter-area tournaments and from easier public scrutiny of the relative efficiency of neighbouring councils. In recent years central government has increased both of these competitive pressures by exhorting local authorities to publish annual reports on their performance (Boyne and Law 1991).

(d) One tier or two tiers?

The implication of the American evidence is that greater efficiency would be secured by a unitary system based on districts rather than counties. However the relative merits of a structure of unitary districts and the existing two-tier structure is less easily evaluated. A system of unitary districts would produce benefits from the horizontal fragmentation of county services, but each local government unit would monopolize the local tax base and the whole range of service provision. The two-tier system is subject to internal competitive pressures and sharper public scrutiny, but there is little horizontal fragmentation in the provision of major services at the county level. Thus the relative efficiency of the two systems depends on the relative size of the effects of horizontal and vertical structure. The empirical evidence is not sufficiently sophisticated to permit such an evaluation even for American local government, let alone to permit the application of the estimates to the British context. However, it may be possible to obtain the 'best of both worlds' by devolving some of the current county functions to the districts. This would increase the horizontal fragmentation of service provision, reduce the counties' market share and retain the benefits of vertical fragmentation.

Finally, it must be remembered that the creation of unitary authorities is likely to influence service demands as well as service efficiency. If the services provided by districts are spatially divisible, then the transfer of these services to the county level may suppress public demand unless log-rolling occurs. Similarly, if the services provided by counties are spatially indivisible, then the fragmentation of these services may reduce demand for them. Thus the impact of structural change on the demand for services depends on the 'fit' between district and county boundaries and the geographical constituencies for divisible and indivisible services respectively. This is an issue which urgently requires empirical investigation. However, if the fit is already close, then a unitary structure based on either the counties or the districts is likely to reduce the responsiveness of the local government system to public demands.

CONCLUSION

The relationship between local government structure and performance is theoretically and empirically complex. Local government structure itself is multi-dimensional:

fragmentation and concentration may vary both vertically and horizontally. A structural change on any of these dimensions has a number of theoretical effects and the net outcome is not precisely predictable a priori. However, the empirical evidence from the USA suggests that local government systems which are fragmented and deconcentrated are generally associated with lower spending and greater efficiency.

There is a large academic literature on local government reform in the UK, but almost all of it is concerned with the political and administrative processes of reorganization. Hardly anything is known about the consequences of structural change. This problem is not unique to studies of local government reform in the UK. For example, a recent comparative study of local government reorganization in Western nations by Dente and Kjellberg (1988) virtually ignores structural effects. Nor is the problem unique to studies of local government reorganization. As Salamon (1981, p. 474) comments on studies of central government reform, 'serious empirical work on the real effects of reorganisation is not only deficient; it is non-existent' (see also March and Olson 1983).

The empirical vacuum surrounding local government reorganization in the UK means that structures must stand and fall on the shifting sands of the 'administrative logic' espoused by central government. However, it may be possible to find some structural stability by appealing to evidence from nations with substantial structural diversity. On the basis of the evidence from the USA, the lesson is that the introduction of a single-tier system is at best a leap in the dark. And at worst, it is likely to produce a less efficient local government system which will be prone to further structural reform.

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