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Explaining variations in spending levels between local authorities: an economic analysis

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Explaining variations in spending levels between local authorities: an economic analysis

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Abstract

This paper puts forward and tests a simple model of how the median voter in a local authority (LA) may determine the level of its expenditure in relation to its needs, to see what lessons may be learned. For Scottish LAs, variations in spending in relation to need are very small, but the model explains these variations well; it also suggests that the Scottish National Party leads to the lowest spending levels, and that the island LAs receive over-generous needs allowances. For England, the model explains variations in service levels very well for LAs with relatively low spending but very poorly for LAs with relatively high spending: this suggests that the latter are prevented by capping from providing the high service levels that their median voters want. Also, it is found that among underspenders, increased efficiency reduces spending. Finally, no evidence was found to suggest that the 2002 downward revisions in the relative spending needs of the English shire counties were inappropriate.

Keywords: Local authority spending; Overspending; Tax capping; Tax price; Value for money.
JEL classification numbers: H71, H72, H73.

I Introduction

In Scotland, the relative needs to spend for each local LA (LA) are determined using complex formulae devised at Holyrood, and are published as figures called Grant Aided Expenditures (GAEs). In England, the relative needs to spend for each LA are determined by even more complex formulae devised at Westminster and, until 2006-07, called Formula Spending Shares (FSS). All these estimates are assessed after allowing for the modest level of specific grants that LAs receive to support particular services.

Both Holyrood and Westminster stress that their GAE and FSS figures reveal only relative needs, not absolute needs (ODPM, 2002, paragraph 10; Scottish Parliament, 2002). However, GAE do figures indicate the need to spend to provide local services at an overall level laid down by Holyrood, while FSS figures indicate the need to spend to provide local services at an overall level laid down by Westminster. So Scottish LAs which spend most in proportion to their GAEs should have the highest service levels in Scotland, if they spend the money efficiently. Likewise, English LAs which spend most in proportion to their FSSs should have the highest service levels in England, if they spend the money efficiently.

In this paper, the assessed need to spend for a given LA, that is its GAE or FSS as appropriate, is denoted as E^*, while its actual expenditure is denoted as E. The percentage differences between E and E^*, which are called percentage overspends and underspends, vary between LAs. In 2004-05, the figures for England ranged from 23% underspending in Westminster to 9% overspending in Rutland; ignoring Inner London, the biggest underspend was 7% in Bromley. In Scotland, the percentages ranged less, from spending at E^* in Eilean Siar to 6% overspending in Stirling; on the mainland, the lowest figure was 2% overspending in Falkirk. (The sources used for these ratios are noted in Section III). These variations are important because, aside from any variations in efficiency, and any shortcomings of the needs formulae, they indicate variations in service levels.

The paper aims to explore the factors which may explain why E/E^*, and hence service levels, vary between LAs. Section II outlines the institutional and financial settings in which LAs operate. Section III suggests a simple model in which the level of spending in an LA is determined by its median voter. Section IV considers the data needed to test the model and the data sources. Section V tests the model against LAs in Scotland. Section VI tests it against LAs in England. Sections III to VI all assume that all LAs spend their money efficiently. Section VII relaxes this assumption. Section VIII gives the conclusions.[1]

II The institutional and financial setting

In explaining the institutional and financial settings in which LAs operate, it is helpful to take Scotland and England separately, although the differences between them are relatively small.

Scotland

Scotland has 32 LAs. Essentially, each LA provides all local services except fire and police. Fire and police services are provided by regional single-function police forces and fire brigades which each cover a number of LAs. However, the police forces and fire brigades

[1] I am grateful to Professor D N F Bell for comments on this paper.

receive their finance from the LAs concerned, and Holyrood therefore takes account of LAs' need to spend on these services when it assesses each LA's GAE.

Take a given LA whose need to spend is E^*. Holyrood believes that the LA should finance some of this through the council tax. This is the only local tax and is a property tax levied on the occupiers of dwellings. Each dwelling is placed by value into one of eight bands A to H. The given LA will set its own tax rate, t, which is stated as the payment due on the occupiers of each Band D dwelling. Then the tax due on the occupiers of dwellings in other bands is set higher or lower according to their band: the ratios of the payments due in each band are set centrally, and range from two-thirds of the Band D amount for dwellings in Band A to double the Band D amount for dwellings in Band H. However, the LA also has to offer a standard set of discounts on specified dwellings, such as a 25% discount on any dwelling with only one adult. Incidentally, low income households are entitled to helped to pay their tax through a central government scheme called Council Tax benefit.

Estimates of an LA's tax base, B, are measured in Band D equivalents. Suppose the given LA levies a rate of £X per Band D dwelling. Then its revenue will depend on the number of dwellings in its area that lie in each band, and also on the value of the discounts that it has to offer. Say the total revenue is £Y. Then its number of Band D equivalents is defined as Y/X.

Holyrood determines a rate of council tax, t^*, which it believes an LA should set if it wishes to provide services at the level commensurate with E^*. As each Scottish LA finances all LA services, t^* is uniform throughout Scotland. If the given LA sets a rate of t^*, and if it collects the tax due on every property, then its tax revenue will be t^*B. Across LAs, t^*B ranges from 10-25% of E^*. To bridge the 75-90% gap, Holyrood gives each LA some financial support, setting $F = E^* - t^*B$ in each LA. Taking the level of services commensurate with E^* as a standard level, F/E^* measures the fraction of this level that is financed externally.

The LA's actual revenue and spending depends on its tax rate, t. If it collects all the revenue due at this rate, then its tax revenue will be tB. In practice, no LA collects all the tax that is due. Call the fraction that is collected c. Then the LA's actual tax revenue is ctB, so its expenditure, E, is $ctB+F$. The ratio E/E^*, that is $(ctB+F)/E^*$, shows how much it spends in relation to the amount needed to finance the standard service level. So, assuming it spends its money efficiently, E/E^* indicates its level of services in relation to the standard level.

England

The situation in England resembles that in Scotland, except that no English LA is responsible for all LA services.[2] To explain the consequences, England will be divided into four types of area.

First, there is London. This has 32 London boroughs (12 in inner London and 20 in outer London). Like Scottish LAs, these essentially provide all local services except fire and police.[3] In London, however, fire and police services are provided by separate single-function LAs: these set their own separate council tax rates on all dwellings in their areas, and they receive their own external finance directly from Westminster. So London boroughs finance fewer services to finance than Scottish LAs.

[2] This paper ignores two tiny and anomalous LAs: the City of London and the Isles of Scilly.
[3] A few functions are also handled by the Greater London LA; this is an upper tier with very limited expenditure

Secondly, there are the six metropolitan areas of Greater Manchester, Merseyside, South Yorkshire, Tyne and Wear, West Midlands and West Yorkshire. Each of these areas has a number of metropolitan districts. There are 36 of these districts in all, and like London boroughs they provide all services except fire and police. As in London, these services are provided by separate single-function LAs.

Thirdly, there are 46 areas with so-called unitary LAs. These LAs provide all local services except fire and police which are again provided by separate single-function LAs. However, the Isle of Wight unitary LA is exceptional in providing its own fire service.

Fourthly, there are 34 shire county areas. Each of these areas has a shire county council which provides the main local services. But in these 34 areas, there is also a lower tier of shire districts which provide some minor local services; there are 238 shire districts in all. In each of the 34 shire areas, policing is provided by a separate single-function police LA that covers two or more shire areas. In 20 cases, a similar arrangement applies to fire services, but the remaining 14 shire councils provide their own fire services. Because of these arrangements is that the range of services provided and financed by shire counties is not uniform.

For each London borough, metropolitan district, unitary LA and shire county, and also for each shire district, fire LA and police LA, Westminster determines a FSS or spending level, E^*, that should allow for its services to be provided at what is here termed a standard level. And for each of these LAs, Westminster also determines a rate of council tax, t^*, which it believes that the LA should set if it wishes to have services at the standard level commensurate with E^*. The value of t^* varies between LAs depending on the services they provide: but across England, there is a uniform total t^* for all the LAs which operate in any given location.

If an LA sets its appropriate t^* and collects all the tax due, then its tax revenue is t^*B. Across LAs, t^*B ranges from 15-49% of E^*. To bridge the 51-85% gap, Westminster gives each LA some financial support, setting $F = E^* - t^*B$ in each LA. So in each LA $F = E^* - t^*B$, and F/E^* measures the fraction of the standard service level which is financed externally.

An LA's actual revenue and spending depends on its tax rate, t, and the fraction of the tax due that is collected, c. So, as in Scotland, its expenditure, E, equals $ctB+F$, and its service level – assuming it spends its money efficiently – is indicated by E/E^*, that is $(ctB+F)/E^*$. This service level ratio can be used for any LA, irrespective of the services which it provides.

This paper does not examine every English LA. Instead, it looks only at the 148 main spending LAs, that is the 32 London boroughs, the 36 metropolitan districts, the 46 unitary LAs, and the 34 shire counties. It ignores the 238 shire districts whose spending levels are relatively low. It also ignores the fire and police LAs, partly because their spending levels are relatively low and partly because they are not run by directly elected councils, but are instead run by boards: these boards comprise representatives of the main LAs whose areas the LAs cover and, in the case of the police, other appointed members. This indirect accountability blurs the relationship between the LA's activities and the preferences of the median voter in its area, yet, as will be now explained, it is on these voters that the paper focuses.

III A model for the determination of local spending levels

Suppose that each LA spend its money efficiently, so that its service level is given by E/E^*, where $E=ctB+F$. Suppose, also, that its E, and by implication its t, are set in accordance with the preferences of its median voter, M. As far as M is concerned, B and F are exogenous.

Turnouts at local elections rarely exceed 50%, so that median electors rarely vote. For example, in the 2002 local elections in England, turnout was 35% on average and below 20% in some LAs (ERS, 2002, 5). What matters however, is the preference of the median person who *does* vote, M. It is assumed that M maximizes welfare subject to a budget constraint. This constraint defines M's income net of direct central government taxes as Y_N, and it defines M's disposable income, which also deducts M's council tax payment, as Y_D.

Suppose, initially, that M lives as the sole adult in a Band D dwelling. The tax-price of local services for a Band D dwelling, that is the tax which must paid in respect of that dwelling to secure local services at a particular level, is given as P_D; for convenience, P_D is given as the price that would be paid for the level of services that would be secured if local spending was E^*. So P_D equals E^*/cB. For example, if E^* is £380m, B is 100,000 Band D equivalent dwellings, and the collection rate c is 0.95, then the tax-price per Band D dwelling for spending at E^* is £380m/(0.95*100,000) or £4,000. As M here is taken to live in a Band D dwelling, this is the tax-price to M.

As explained earlier, if the LA spends its money efficiently, then the level of local services enjoyed by all its citizens, including M, is E/E^*. If the LA received no external finance, then M's local tax payment would equal the price to M of LA services times the service level, that is $P_D.E/E^*$. Given an income net of central taxes of Y_N, M's disposable income net of all taxes, Y_D, would be $Y_N-P_D.E/E^*$. So M would face the budget constraint $(Y_N-Y_D-P_D.E/E^*)=0$. In practice, M could enjoy some local services without paying any local tax, because of external funding. The quantity of externally funded services is given by F/E^*. So if M lives in a Band D dwelling, then M's budget constraint is given by $[Y_N-Y_D-P_D(E-F)/E^*]=0$.

If M lives in a higher (or lower) band than Band D, then M will have to pay more (or less) than people in Band D dwellings for any given level of services, so M will face a higher (or lower) tax-price than P_D. To allow for this, M's budget constraint is in future given as $[Y_N-Y_D-P_M(E-F)/E^*]=0$ where P_M is the price faced by M's dwelling.

If M is not the sole adult in a household, so that the council tax burden is shared among two or more, then the tax-price to M will be lower. For simplicity, it is assumed that M is the sole adult. In fact, the results would apply however many adults there were in M's household, provided that the composition of the household of the median voter was the same across all LAs, for then the tax-price to all these voters will be proportional to the tax-prices used here.

Given this budget constraint $[Y_N-Y_D-P_D(E-F)/E^*]=0$, M decides on the level of local services, E/E^*, and, by implication, the local tax rate t. M's decision depends on Y_N, P_M and the service level funded externally, F/E^*. Also, of course, it depends on M's preferences. It is assumed that voters' preferences are revealed by the way in which they vote, so that their preferences are effectively political preferences. In the model, varying political preferences between LAs are allowed for with a political variable, POL. POL is defined later.

To test whether these four crucial variables - F/E^*, P_M, Y_N and POL - help to explain observed variations in E/E^*, OLS regression was used to test the following hypothesis for the financial year 2004-05:

$$E/E^* = \alpha + \beta F/E^* + \gamma P_M + \delta Y_N + \varepsilon POL + u. \quad (1)$$

IV Data issues and sources

To test the hypothesis in equation (*1*), data are needed for E^*, F, E, P_M, Y_N and POL. Note that E^* was used to calculate the price of local services, which depends on E^*/cB, and to work out the level of services supported by F, that is $E^* - t^*B$.

E^*

The figures for E^* were those which Westminster estimates for its FSSs and which Holyrood estimates for its GAEs. The 2004-05 data can be replicated by deducting the figures in ODPM (2006a) from those in ODPM (2006b). The 2004-05 data for Scotland were supplied directly by the Scottish Executive. Of course, these estimates of relative need are unlikely to be perfect. Any errors mean that observed relationships in (*1*) will be weakened. This is because it must be assumed that median voters have some idea of, and behave on the basis of, true service levels, true tax-prices and the true levels of services financed by F.

F, E and P_M

In each LA, F is estimated as $E^* - t^*B$. The sources for E^* are given above. Data for B in England are given in ODPM (2006a): data for t^* are no longer available on-line but are close to those in ODPM (2006d). Data for B are given in Scottish Executive (2002) while data for t^* in Scotland were supplied directly by the Scottish Executive.

Using the above data for F and B, E was estimated for each LA as $F + ctB$. Data for t in England are given in DCLG (2006, Table 2). Data for t in Scotland are given in Scottish Executive (2006a). Data for c are given for England by ODPM (2005, Table 2) and for Scotland by the Scottish Executive (2006b). Low council tax collection levels are quite a problem in some LAs: in 2004-05, for example, Hackney collected only 84.4% of the tax due, while Glasgow collected only 85.6%.

To estimate, P_M, the price to the median voter, M, requires data for E^*, B and c, which were found from the sources noted above. It also requires data for the Band of M's dwelling. Unfortunately, this information is not available as the identity of M in each LA is not known. So it was assumed that M's dwelling is in the band in which the median dwelling of M's LA lies. Data on this were obtained for each LA (ODPM, 2006c, for England, and Scottish Executive 2005, Table 6.3, for Scotland). In Scotland, this band ranged from A in East Ayrshire and Inverclyde to E in East Dunbartonshire and East Renfrewshire, but was otherwise always B or C. In England, it ranged from A in 28 LAs, including 19 of the 36 metropolitan districts, to F in Kensington and Chelsea, and E in some other inner London boroughs as well as Windsor and Maidenhead unitary LA.

Y_N

Y_N is the median voter's income net of direct central taxes. The most useful income data by LAs in both England and Scotland is HMRC (2006, Table 2.14). This source gives data on the number of taxpayers, the mean taxable income for income taxpayers, and the median taxable income of the income taxpayers. It covers each Scottish LA, and each English London borough, metropolitan district, unitary LA and shire district, for each year from 1999-2000 to 2004-05. For the last two of these years, the data also cover the mean amount of tax paid by each taxpayer, allowing the mean income net of central income tax to be found.

These data are based on samples and are sometimes erratic over time. For example, they suggest that between 2002-03 and 2003-04, mean incomes in Orkney rose by 11% while mean incomes in Shetland fell by 11%; and that mean incomes in Crewe and Nantwich rose by 14% while mean incomes in Warrington fell by 10%. So the analysis used weighted averages for the number of taxpayers, the mean taxable income for income taxpayers, and the median taxable income of the income taxpayers: data were used for 2001-02, 2002-03, 2003-04 and 2004-05, with each year weighted equally. The data for shire districts were amalgamated to get figures for shire counties.

Then, for each LA, the mean income (net of central tax) per taxpayer was estimated by applying to the weighted mean pre-tax incomes the average proportion of the 2003-04 and 2004-05 incomes that went in tax that year in each LA. It would then have been possible to assume that Y_Ns vary across LAs in a constant proportion to these mean net incomes per taxpayer. However, there would be two problems with that.

First, these data ignore the incomes of non-taxpayers. There is, unfortunately, no adequate LA data for this, and perhaps this problem is not very serious because the majority of adults are taxpayers so M very likely is a taxpayer.

Secondly, two LAs might have equal net incomes per taxpayer, but one LA might have more dependents per taxpayer than the other. Accordingly, the total net income of taxpayers in each LA was estimated, and this was then divided that by the total population of each LA to get an estimate of its net income per head. It was these figures that were used for Y_N. (Population figures for England and Scotland were taken from National Statistics, 2006, and General Register Office for Scotland, 2006.)

POL

Finally, M's political preferences must be measured. The most useful data are those for the number of representatives from the various political parties on each LA's council at 1 April 2003: it was these councillors who set the tax rates and spending levels for 2004-05. Data on councillors for Scottish LAs and for English metropolitan districts and unitary LAs were obtained from House of Commons (2003), except those unitary LAs which had elections in 2002; for these data was obtained from SocietyGuardian (2006b). For the London boroughs data was obtained from House of Commons (2002), and for the shire counties data was obtained from LGCnet (2006) and SocietyGuardian (2006a).

It is tempting suppose that the political orientation of the median councillor in an LA indicates the preferences of its M. But take two hypothetical LAs, one with 15 Conservative

councillors, 15 Liberal Democrat and 31 Labour, and the other with 5 Conservative councillors, 5 Liberal Democrat and 51 Labour. In each case, the median councillor is Labour, but with an eye on future elections, the first council might pay more heed than the second to the views of non-Labour voters when setting its policies.

Accordingly, it seemed appropriate to consider the percentage of councillors from one or more parties. For England, the percentage which gave the best results was the percentage of councillors who were either Labour or Liberal Democrat: these parties tended to be associated with higher levels of local spending, while the Conservatives tended to be associated with lower levels of local spending. In Scotland, however, the percentage which gave the best results was the percentage of Scottish National Party (SNP) councillors: this party tended to be associated with lower spending while the others tended to be associated with higher spending. Admittedly, these percentages may give very approximate ideas of the views of M in each area.

These data problems suggest that the results from testing the spending hypothesis given here with the data actually used may be relatively weak. Moreover, there is an additional problem in that if LAs spend money inefficiently, then E^*/cB will poorly indicate tax-prices. The results need to be interpreted with these reservations in mind.

V Testing the model in Scotland

The hypothesis in equation (*1*) was tested against all 32 LAs in Scotland. The results are shown in Table 1, column (1). It is worth noting the meaning of the coefficients for the four independent variables in this column. -0.066 for external finance means that if there was a 1% rise in external finance, say from 70% of E^* to 71%, then E/E^* would fall by 0.066%; so this coefficient is in the wrong direction. -0.813 for the tax-price means that if the tax-price of E^* for a Band D dwelling rose by £1,000, say from £3,000 to £4,000, then E/E^* would fall by 0.813. 0.340 for the income coefficient means that if the mean net income per head rose by £1,000, say from £10,000 to £11,000, then E/E^* would rise by 0.340. And -0.0190 for POL means that if the percentage of SNP councillors rose by 1%, say from 60% to 61%, then E/E^* would fall by 0.019%.

The adjusted R^2 is 0.563, but among the four explanatory variables, the tax-price and politics variables are significant at 10%, and no other variables are significant. And the coefficient for the tax-price is in the wrong direction.

Allowing for outliers

One problem with the results shown in column (*1*) is that the three island LAs, Eilean Siar, Orkney and Shetland, are outliers in two respects. Their external finance ranges from 88% to 90% of GAE, compared with 75% to 84 % for mainland LAs. Also, their tax-prices are relatively high; for example, for a Band D dwelling, their tax-prices ranged from £7,092 to £8,583, compared with £3,619 to £5,913 for mainland LAs. These outlying values arise because their assessed needs are augmented by a special and generous allowance. Thus their needs range from £2,466 per head in Orkney to £2,817 in Shetland, compared with a range on the mainland that runs from £1,424 in Edinburgh to £1,905 in Glasgow.

To address this outlier problem, a dummy variable was added for the island LAs. The results are shown in column (*2*) of Table 1. The adjusted R^2 is 0.638, higher than in column (*1*), and this time all the coefficients have the right sign. Admittedly the tax-price is no longer significant at 10%, but income per head becomes significant at 1% instead of being insignificant, and politics is significant at 5% instead of 10%. Also, the dummy variable is significant at 5%.

Column (*2*) suggests that the model explains the small observed variations in overspending quite well. Its only shortcoming is failing to find a significant coefficient for external funding and the tax-price. However, this may be due to some multi-collinearity, as the correlation coefficient between these two variables is 0.756. *(but 0.291 for the 29 mainland LAs!)*

Two implications of the results

Aside from consistency with the model, there are two other points of interest in the results. One is that the definition of POL giving the best results is the percentage of councillors who are SNP, and that they tend to support lower overspending. Each other party was taken in turn, but there was no significant relationship between the proportion of its councillors and overspending. However, the relationship was positive for councillors from the Conservative party, the Labour party and the Liberal Democrat party. The relationship was negative for councillors with 'Other' allegiances than the main parties.

The other interesting result is the significant coefficient for the island dummy. This means that their overspending is much smaller than would be predicted by using the other variables alone. This implies that their needs are assessed over-generously.

V Testing the model in England

The hypothesis in equation (*1*) was next tested against LAs in England. Here, the percentage of Labour councillors was used for the POL variable as generally gave the best results.

The first test involved all the 148 main LAs, that is the Inner London Boroughs, Outer London Boroughs, Metropolitan Districts, Unitary Authorities and Shire Counties. The results are shown in Table 2 column (1). The coefficients for external finance and taxable income had the wrong sign and are shown in italics; despite the wrong sign, the latter was 'significant' at the 1% level. Although the tax-price variable was significant at 1%, as was the intercept, the results overall were disappointing.

Allowing for types of LA

The analysis was then repeated with the 12 Inner London Boroughs omitted. This group of LAs is an outlying group: it has an average underspend of 6.70% and an average mean income (net of central tax) per taxpayer of £36,400, whereas other LAs have an average overspend of 1.47% and an average mean income (net of central tax) per taxpayer of £24,900. So when these boroughs are included, their substantial underspends and their high incomes mean that, taking England as a whole, income tends to be related significantly negatively with service levels, even though a positive relation would be expected and is found among the other LAs.

The results of omitting the Inner London Boroughs m are shown in Table 2 column (2). Here the coefficient for income has the right sign. Indeed all the coefficients have the right sign except POL which is not significant. Moreover, the intercept and external finance are both significant at the 10% level.

Compared with the Scottish results, it is interesting that external finance and the tax-price are both significant here, whereas taxable income and POL are not. The analysis then took a closer look at the various groups of LAs included among the 136. It found that shire counties on average overspend much more than any of the other groups: their average is 4.54% compared with 0.25% for unitary LAs, 1.08% for metropolitan districts, and -0.22% for outer London boroughs.

To capture this effect, column (3) of Table 4 shows a repeat of the same regression as column (*1*) but with the inclusion of a dummy variable, set at 1 for shire counties and 0 for other LAs. Here the tax-price remains significant at 1% but no other variable is significant except the dummy itself which is significant at 1%.

Results for overspenders and underspenders

One question raised by this analysis is why the model gives much poor results in England. Arguably, it is because, since 1984, England has had an almost constant policy of 'capping' LAs (DCLG, 2000, Annex D). The rules have changed almost annually and have occasionally have been a threat rather than a reality. But capping may have prevented LAs whose median voters want a high level of services from setting a high E/E^*.

It is possible to test this hypothesis. Capping may frustrate high spenders from meeting the wishes of median voters, but it should not frustrate low spenders. To explore this, Table 3 looks separately at underspenders and overspenders. Underspenders here are defined as LAs where E/E^* is less than one, and overspenders as LAs where it is greater than 1.

Column (*1*) gives the result for overspenders when there is no shire dummy; here the tax-price is significant at 1% and taxable income at 5%. However, Column (*2*) gives the result when there is a dummy; here the only significant variables are the tax-price and the dummy, and each is significant at only 10%, and POL has the wrong sign. Thus the model performs poorly with overspenders.

In contrast, column (*3*) shows the result with underspenders; there is no need for a shire county dummy here because no county is an underspender. Here, the intercept, external finance and tax-price are all significant at 5% and the other coefficients all have the right sign. As the model performs much better for underspenders than overspenders, it is concluded that the capping regime tends to prevents overspenders from meeting in full the wishes of their median voters.

A question raised by the analysis is why shire counties were relatively large overspenders in 2004-05. Arguably, this was largely because of a review of local government needs assessment in 2002 forced them into an overspend situation (information from CCN, 2005, 4 and 40). At that time, the total E^* for England rose by £4,000 million, but for shire counties it fell by £311m. In time, this realignment will no doubt lead to lower spending by counties

and higher spending by other LAs. But over the period when spending levels are being adjusted, E/E^* would be expected to be higher in LAs where E^* has been cut and lower in LAs where it has been raised.

VI Efficiency and performance

Efficiency

So far it has been assumed that LAs spend their money efficiently. This means that E/E^* is not only a measure of percentage overspending but also of service levels. In practice, efficiency no doubt varies between LAs. Holding other variables constant, high efficiency would be expected to lead to lower spending levels. For example, if M finds that M's LA is becoming more efficient, then M would be expected to allow the service level to rise a little, but also to opt for slightly lower spending, and hence for a lower tax rate, to allow M also to enjoy more private goods and services. However, this is more likely to happen in underspending LAs than overspending ones. M in an overspending LA may have ambitions for higher services that are hindered by the capping regime: so here, an increase in the LA's efficiency might translate wholly into higher services and not at all into lower expenditure.

No Scottish data that measured the overall efficiency of each LA were found. But for England, the Audit Commission (2006) publishes a 'value for money' rating for each main LA. This is a simple measure where the only values allowed are 1, 2, 3 and 4, higher numbers indicating greater efficiency. The ratings are actually derive from self-assessment (Audit Commission, 2005, 12) so they might seem to lack objectivity. Nevertheless, this variable was added to see if high efficiency reduced spending. Table 6 gives some results.

Column (*1*) here looks at overspenders and simply adds value for money as an extra variable to the regression given in column (2) of Table 5. Adding the extra variable makes no salient difference to the result. Moreover, although the extra variable has a negative coefficient, it is not significant, a result consistent with the reasoning in the previous paragraph.

Column (2) of Table 4 looks at for underspenders and simply adds value for money as an extra variable to the regression given in column (3) of Table 5. Here, every variable becomes significant, except for POL. So, taken as a whole, Table 6 shows that even when efficiency is allowed for, the model continues to apply much better to underspenders than overspenders.

Performance

Finally, it seemed worth considering other measures of service levels than E/E^*. No other Scottish data for the performance of each LA were found. But in England, the Audit Commission (2006) published a rating for some LA services. They gave a simple star rating of 1, 2, 3 or 4 to key blocks of services, with 4 being highest. For the purposes of this paper, the key ratings were for children's services (which include education and children's personal social services), adult services (which cover other personal social services), environmental services, and cultural services. To obtain an overall performance rating for each LA, its rating for each of these groups was weighted by the importance of that group for the LA, as indicated by the group's FSS as a share of the LA's FSS. . Although this process started with discrete data, it produced a continuous measure: and its continuity doubtless gives a spurious impression of accuracy.

These performance ratings were then regressed value for money and E/E^*. In principle, one would expect a very good result, since performance should surely reflect spending (allowing for need) and efficiency. So what the results here really test is the consistency of the data. Moreover, one would expect performance to reflect spending (allowing for need) and efficiency across all LAs, so overspenders and underspenders were taken together.

The results are given in Column (*1*) of Table 5, and show that value for money is significant at the 1% level in explaining variations in service performance. On the other hand, E/E^*, while positively related to service performance, is not significantly related. This suggests that the data on performance or value for money are imperfect, or that E^* figures do not perfectly indicate relative spending needs. Most probably there are some shortcomings in all three data sets.

However, this result was sufficiently plausible for it to seem worth running the regression again with a shire county dummy. The result is shown in column (*2*). The intention here is to throw some light on the decision in 2002 to reduce the relative needs of the shire counties. Suppose that the new relative needs for shire counties were really too low. Then, other things being equal, one would expect a given E/E^* in a county to lead to a poorer performance than elsewhere. So one would expect the shire county dummy to have a negative coefficient. In fact, column (*2*) shows that the coefficient is positive, albeit not significantly so. So there is no reason to accept the hypothesis that shire counties are discriminated against.

VII Summary and conclusions

This paper has tested a simple model of LA expenditure to LAs in both Scotland and England. Initially, the model used external finance, tax-price, income and political standpoints as explanatory variables.

In Scotland, there was a problem in that the three island LAs were outliers in terms of having very high assessed needs and hence, in turn, relatively high levels of external finance and relatively high tax-prices. This problem was addressed by adding a dummy variable for the islands. The results suggested that the model made good predictions, although multi-collinearity between external finance may reduce their significance.

The model was tested with a range of different definitions of the political preference variable, POL. The only definition to give significant results was the percentage of councillors who are from the SNP. The results suggest that having more SNP councillors reduces overspending while having more councillors from any other party increases it.

The island dummy had a significant coefficient. This means that the islands' overspending is much smaller than would be predicted by using the other variables alone. This implies that their needs are assessed over-generously. However, it is very possible that the generous treatment which the islands are given may be partly addressing agendas other than local government finance, perhaps helping to ensure that the islands' economies remain robust.

The first tests in England for all main LAs gave poor results. Rather better results were found by omitting Inner London boroughs. However, when a dummy variable for the shire

counties was also added, it seemed that the tax-price was the only significant variable other than the dummy. It was argued that many years of capping in England might frustrate LAs whose median voters want high spending levels from meeting their wishes. Support for this hypothesis was found by running separate regressions for underspenders and overspenders: the independent variables tended to have more significant coefficients the underspenders than for the overspenders.

Then a measure of value for money was added. This improved the performance of the model for underspenders, with every variable other than POL being significant, but again resulted in a poor performance for overspenders. If the role of local government is seen to be providing services in accordance with local wishes, then it seems that for overspenders, that is for the majority of English LAs, the present arrangements frustrate this aim. Indeed, capping can be seen as imposing maximum standards.

Finally, it is likely that the model might perform better for Scotland if value for money there could be allowed for. Also, for England, the analysis suggests that increased local efficiency reduces local spending, but it does not suggest that the 2002 reduction in the relative spending needs of shire counties was inappropriate.

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Table 1: Results for percentage overspending by Scottish LAs, 2004-05.

Regression	***(1) For all 32 LAs***	***(2) For all 32 LAs with dummy for islands***
N	32	*32*
Constant	9.361 (0.909)	-12.152 (-0.968)
External finance as % of GAE	*-0.066* *(-0.521)*	0.152 (1.063)
Tax-price for dwellings in median band	-0.813 (-1.835)*	-0.470 (-1.106)
Taxable income net of tax per head	0.340 (1.614)	**0.653** **(2.875)*** **
POL % of councillors who are SNP	**-0.019** **(-1.683)***	**-0.022** **(-2.094)** **
Dummy 1 for island LAs, 0 elsewhere	Not applicable	**-3.154** **(-2.573)** **
Adjusted R^2	0.563	0.638

***Significant at 1%; **significant at 5%; *significant at 10%.

Table 2: Results for percentage overspending by the main English LAs, 2004-05.

Regression	***(1) For all 148 main LAs***	***(2) Excluding Inner London***	***(3) With shire county dummy***
N	148	136	136
Constant	**25.874** **(3.109)*** **	-5.120 (-0.640)*	-2.220 (-0.296)
External finance as % of GAE	*-0.152* *(-1.296)*	0.192 (1.879)*	0.103 (1.052)
Tax-price for dwellings in median band	**-2.637** **(-4.206)*** **	**-3.451** **(-6.809)*** **	**-1.864** **(-3.149)*** **
Taxable income net of tax per head	*-0.751* *(-3.951)***	0.304 (1.423)	0.130 (0.641)
POL % of councillors who are Labour	0.007 (0.442)	*-0.011* *(-0.834)*	*-0.009* *(-0.784)*
Dummy 1 for shire counties, 0 elsewhere	Not applicable	Not applicable	**2.678** **(4.473)*** **
Adjusted R^2	0.347	0.316	0.403

***Significant at 1%; **significant at 5%; *significant at 10%.

Table 3: Results for percentage overspending by overspending and underspending English LAs, 2004-05.

Regression	***(1) Over-spenders***	***(2) Overspenders with dummy***	***(3) Under-spenders***
N	92	92	44
Constant	-1.583	0.423	**-24.586**
	(-0.243)	(0.065)	**(-2.242)****
External finance as % of GAE	0.118	0.051	**0.293**
	(1.351)	(0.544)	**(2.274)****
Tax-price for dwellings in median band	**-2.755**	**-1.528**	**-1.066**
	(-4.974)***	**(-1.729)***	**(-2.143)****
Taxable income net of tax per head	**0.374**	0.277	0.518
	(2.248)**	(1.599)	(1.629)
POL % of councillors who are Labour	*-0.005*	*-0.003*	0.006
	(-0.411)	*(-0.290)*	(0.531)
Dummy 1 for shire counties, 0 elsewhere	Not applicable	**1.124** **(1.767)***	Not applicable
Adjusted R^2	0.350	0.366	0.110

***Significant at 1%; **significant at 5%; *significant at 10%.

Table 4: Results for percentage overspending by overspending and underspending English LAs, 2004-05, allowing for value for money.

Regression	***(1) Overspenders***	***(2) Underspenders***
N	92	44
Constant	2.155	**-21.726**
	(0.317)	**(-2.011)****
External finance as % of GAE	0.038	**0.272**
	(0.398)	**(2.163)****
Tax-price for dwellings in median band	**-1.564**	**-1.097**
	(-1.767)*	**(-2.261)****
Taxable income net of tax per head	0.269	**0.531**
	(1.551)	**(1.714)***
POL % of councillors who are SNP	-0.002	0.010
	(-0.151)	(0.867)
Value for money indicated by integers1-4, with 4 being best value	-0.273 (-0.949)	**-0.655** **(-1.759)***
Dummy 1 for shire counties, 0 elsewhere	**1.129** **(1.775)***	Not applicable
Adjusted R^2	0.365	0.156

***Significant at 1%; **significant at 5%; *significant at 10%.

Table 5: Regression results for service performance for English LAs, allowing for value for money, 2004-05

Regression	***(1)*** ***Result without shire county dummy***	***(2)*** ***Result with shire county dummy***
N	*136*	*136*
Constant	**1.766** **(13.733)*** **	**1.767** **(13.653)*** **
Value for money indicated by integers1-4, with 4 being best value	**0.377** **(7.589)*** **	**0.376** **(7.440)*** **
Spending relative to need, *E/E**	0.016 (1.480)	0.015 (1.096)
Dummy 1 for shire counties, 0 elsewhere	Not applicable	0.012 (0.127)
Adjusted R^2	0.304	0.299

***Significant at 1%.