ACTA UNIVERSITATIS LODZIENSIS
FOLIA IURIDICA 49, 1992

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BRITISH LOCAL GOVERNMENT CURRENT EXPENDITURE CHANGE AND BLOCK GRANT

I. INTRODUCTION

Local government expenditure is important both as a part of the economy and as a part of public expenditure. Local authorities' expenditure stood at £35,000 million in 1985–86, forming more than a quarter of the public expenditure planning total and eleven per cent of GDP. Local government employs three million persons in Great Britain, representing fourteen per cent of the workforce.

Seventy–seven per cent of local government spending is devoted to current expenditure, fourteen per cent to capital expenditure and eight per cent to debt financing[1].

The paper begins with an examination of the overall pattern of local authority current spending and then turns to its main focus: the modelling of year–on–year changes in local authority aggregate current expenditure. After theoretical discussion, a model of local authority expenditure change is estimated for the year–on–year change in local authority budgets for three pairs of years: 1982/3 on 1981/2, 1983/4 on 1982/3 and 1984/5 on 1983/4.

Results from modelling year–on–year change in local government expenditure have policy implications for the present government, which, since it came to power in 1979, has been concerned to control the level of local government expenditure. The discussion of expenditure modelling is introduced in a section that surveys the recent expenditure modelling literature. The remaining part of the paper is used to develop a model of local authority expenditure change and test it.

[1] Department of the environment, 1986, p. 83; S. Smith, D. Squire, *Local Taxes and Local Government*, London 1987.

A major element in a local authority's expenditure decision-making is its budget constraint. However the budget constraint facing English local authorities over the years considered – 1982–83 to 1984–85 – is complicated by a complex grant system. Much of the paper is therefore devoted to setting out the nature of this budget constraint and developing summary measures to represent its hypothesised effect on spending. These measures are termed fiscal pressure.

In the final part of the paper a model of local authority expenditure change is estimated using measures of fiscal pressure, variables indicating political and variables measuring other features of the grant system.

II. THE PATTERN OF LOCAL AUTHORITY CURRENT SPENDING

In 1983–84 local authorities in England devoted £23,738m to current expenditure. The distribution of this expenditure for recent yeares is shown in Table 1 which is extracted from a recent public expenditure White Paper (HMSO 1986, p339) and sets out local authority current expenditure by category. The entries for 1984–85 are estimated outturn, as are those for 1985–86, which are derived from local authority budgets.

The distribution of expenditure between categories is seen more clearly in Table 2 which shows the same information expressed as percentages of the yearly totals. Education represents the largest proportion of local authority expenditure, though this has been falling over time, largely as the result of the demographic change of falling school rolls. Social security has at the same time risen sharply, due to a different demographic effect – the rising number of old age pensioners, and has also risen as a result of local authorities being required to take over the administration of housing benefit under the Social Security and Housing Benefits Act 1982.

Table 1

Estimated and outturn current expenditure by category for local authorities in England (£ million)

Branches of economy	80–81	81–82	82–83	83–84	84–85	85–86	86–87
	outturn	outturn	outturn	outturn	outturn	est. outturn	plans
Agriculture, fisheries food and forestry	86	95	97	109	121	125	116
Industry, energy, trade and employment	102	115	128	141	149	160	149

Table 1 (contd.)

Branches of economy	80–81	81–82	82–83	83–84	84–85	85–86	86–87
	outturn	outturn	outturn	outturn	outturn	est. outturn	plans
Arts and Libraries	278	308	339	362	387	409	396
Roads and transport	1 335	1 543	1 751	1 837	1 943	1 778	1 747
Housing	547	525	547	647	584	554	491
Other environmental services	1 880	2 052	2 221	2 383	2 543	2 626	2 651
Law, order and protective services	2 173	2 584	2 869	3 133	3 496	3 578	3 683
Education and science	8 682	9 619	10 227	10 792	11 259	11 627	11 498
Health and Personal social services	1 619	1 795	1 970	2 135	2 278	2 421	2 525
Social security	331	480	880	2 200	2 472	2 678	2 729
Total current expenditure in England	17 031	19 116	21 029	23 738	25 232	25 956	25 985

Source: Extracted from The Government's Expenditure Plans 1986–87 to 1988–89 Cmnd 9702 I & II London, Table 4.1, p. 339.

In Table 3 the entries of Table 1 are adjusted for inflation[2], Table 4 shows actual and estimated year–on–year growth of expenditure and Table 5 shows these growth figures in real terms as derived from Table 3. In the earlier years shown in Table 5, the most dramatic real cuts were in housing in 1981–82. These cuts followed the substantial cuts in housing subsidies on the introduction of a new local authority housing subsidy system in April 1981.

Table 2

Estimated and outturn current expediture by category for local authorities in England as percentages of total

Branches of economy	80–81	81–82	82–83	83–84	84–85	85–86	86–87
	outturn	outturn	outturn	outturn	outturn	est. outturn	plans
Agriculture, fisheries food and forestry	0.50	0.50	0.46	0.46	0.48	0.48	0.45

[2] Using the price deflator shown in Association of County Council (1985, p.279). Because this index did not project forward to 1986–1987 this year's index has been extrapolated using the GDP index which can be calculated from a comparison of CMND 9702–II. Table 2.2 and 2.1.

Table 2 (contd.)

Branches of economy	80–81	81–82	82–83	83–84	84–85	85–86	86–87
	outturn	outturn	outturn	outturn	outturn	est. outturn	plans
Industry, energy, trade and employment	0.60	0.60	0.61	0.59	0.59	0.62	0.57
Arts and Libraries	1.63	1.61	1.61	1.52	1.53	1.58	1.52
Roads and transport	7.84	8.07	8.33	7.74	7.70	6.85	6.72
Housing	3.21	2.75	2.60	2.73	2.31	2.13	1.89
Other environmental services	11.04	10.73	10.56	10.04	10.08	10.12	10.20
Law, order and protective services	12.76	13.52	13.64	13.20	13.86	13.78	14.17
Education and science	50.98	50.32	48.63	45.46	44.62	44.80	44.25
Health and Personal social services	9.51	9.39	9.37	8.99	9.03	9.33	9.72
Social security	1.94	2.51	4.18	9.27	9.80	10.32	10.50
Total current expenditure in England	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Calculated from The Gevernment's Expenditure Plans 1986–87 to 1988-89 Cmnd 9702 I & II London, Table 4.1, p.339.

Table 3

Estimated and outturn current expenditure by category for local authorities in England in real terms (1984–85 = 100, £ million)

Branches of economy	80–81	81–82	82–83	83–84	84–85	85–86	86–87
	outturn	outturn	outturn	outturn	outturn	est. outturn	plans
Agriculture, fisheries food and forestry	114	112	107	114	121	120	106
Industry, energy, trade and employment	135	136	141	147	149	153	137
Arts and Libraries	368	363	373	378	387	392	363
Roads and transport	1 768	1 819	1 924	1 918	1 943	1 705	1 604
Housing	724	619	601	676	584	531	451
Other environmental services	2 490	2 419	2 441	2 488	2 543	2 519	2 433
Law, order and protective services	2 878	3 046	3 153	3 271	3 496	3 432	3 381
Education and science	11 499	11 339	11 238	11 268	11 259	11 152	10 554

Table 3 (contd.)

Branches of economy	80–81	81–82	82–83	83–84	84–85	85–86	86–87
	outturn	outturn	outturn	outturn	outturn	est. outturn	plans
Health and Personal social services	2 144	2 116	2 165	2 229	2 278	2 322	2 318
Social security	438	566	967	2 297	2 472	2 569	2 505
Total current expenditure in England	22 557	22 534	23 109	24 785	25 232	24 895	23 851
Price Index	75.5	84.8	91.0	95.6	100.0	104.3	108.9

Source: Calculated from The Government's Expenditure Plans 1986–87 to 1988–89 Cmnd 9702 I & II London, Table 4.1, p.339 and Association of County Councils (1985) Rate Support Grant, London, Table J, p.279.

It is interesting to compare the planned negative growth in public expenditure, shown in the last column of Table 5, with the positive real growth that has been the overall pattern of outturns. This is an example of an effect that has been noted in earlier work by Jackman (1984), of major planned cuts in expenditure programs, which do not materialise by the time the plans become outturns.

The tendency for these planned cuts not to be fulfilled in subsequent outcomes can be explained in terms of a number of political and institutional effects. Firstly, until the recent Rates Act conferring powers on central government to ratecap selected local authorities, central government has not had direct powers to control the level of any local authority's current expenditure – a situation leading one senior treasury official to describe local government finance as the „Achilles Heel" of Treasury control of public expenditure. Secondly, it has been argued[3] that the effective way to obtain cuts in local government expenditure is to cut central grant. However, it appears that the government has been unwilling to bear the political costs of the implied rate rises[4]. Thirdly, local authorities' political composition has changed during the period which may have worked to prevent cuts[5].

Apart from social security payments which have risen very rapidly for the

[3] J.G. Gibson, *Local „Overspending": Why the Government Have Only Themselves to Blame,* „Public Money" 1983, Vol. 3, p. 19–21.

[4] *Ibidem*

[5] J.G. Gibson, *Why Block Grant Failed,* [in:] G.W. Jones, P.R.S. Ranson, K. Walsh, *Between Centre and Locality,* London 1985.

reasons described above, Law and Order has received the most sustained growth in resources, reflecting central government policy priorities[6].

III. THE FINANCE OF LOCAL AUTHORITY CURRENT EXPENDITURE

The major sources of finance for local government net expenditure[7] are local taxes in the form of rates, and central grants from the government. Rates and grant are linked in the sense that net expenditure must either be financed by rates, grant, or changes in balances.

The total of all grants paid to local government by central government is called aggregate exchequer grant. Out of this are paid specific and supplementary grants and the rate support grant. The relative importance of the various components of aggregate exchequer grant is shown in Table 6.

Table 4

Year on year growth in estimated and outturn current expenditure by category for local authorities in England (in %)

Branches of economy	81–82 on 80–81	82–83 on 81–82	83–84 on 82–83	84–85 on 83–84	85–86 on 84–85	86–87 on 85–86
Agriculture, fisheries food and forestry	10.47	2.11	12.37	11.01	3.31	–7.20
Industry, energy, trade and employment	12.75	11.30	10.16	5.67	7.38	–6.88
Arts and Libraries	10.79	10.06	6.78	6.91	5.68	–3.18
Roads and transport	15.58	13.48	4.91	5.77	–8.49	–1.74
Housing	–4.02	4.19	18.28	–9.74	–5.14	–11.37
Other environmental services	9.15	8.24	7.29	6.71	3.26	0.95
Law, order and protective services	18.91	11.03	9.20	11.59	2.35	2.93
Education and science	10.79	6.32	5.52	4.33	3.27	–1.11
Health and Personal social services	10.87	9.75	8.38	6.70	6.28	4.30
Social security	45.02	83.33	150.00	12.36	8.33	1.90
Total current expenditure in England	12.24	10.01	12.88	6.29	2.87	0.11

Source: Calculated from The Government's Expenditure Plans 1986–87 to 1988–89 Cmnd 9702 I & II London, Table 4.1, p.339.

[6] J.G. Gibson, *The new Housing Subsidy System and its Interaction with the Block Grant*, Inlogov 1981.

[7] „Net" expenditure exludes that financed from fees and charges.

Table 5

Year on year growth in estimated and outturn current real expenditure by category for local authorities in England (1984–85 = 100) in %

Branches of economy	81–82 on 80–81	82–83 on 81–82	83–84 on 82–83	84–85 on 83–84	85–86 on 84–85	86–87 on 85–86
Agriculture, fisheries food and forestry	–1.68	–4.82	6.77	6.32	–0.92	–11.19
Industry, energy, trade and employment	0.35	3.76	4.66	1.21	2.99	–10.88
Arts and Libraries	–1.39	2.60	1.46	2.39	1.37	–7.34
Roads and transport	2.87	5.79	–0.32	1.30	–12.23	–5.97
Housing	–14.58	–2.87	12.38	–13.55	–9.01	–15.18
Other environmental services	–2.85	0.90	1.94	2.21	–0.96	–3.39
Law, order and protective services	5.84	3.50	3.76	6.87	–1.84	–1.49
Education and science	–1.39	–0.89	0.26	–0.08	–0.95	–5.36
Health and Personal social services	–1.32	2.31	2.97	2.19	1.93	–0.19
Social security	29.07	70.91	137.53	7.62	3.91	–2.48
Total current expenditure in England	–0.10	2.55	7.25	1.80	–1.33	–4.20

Source: Calculated from The Government's Expenditure Plans 1986–87 to 1988–89 Cmnd 9702 I & II London, Table 4.1, p.339 and Association of County Councils (1985) Rate Support Grant, London, Table J, p.279.

Table 6

Components of aggregate exchequer grant

Types of grants	1984/85 settlement £m	1984/85 % of relevant expenditure	1984/85 % of grant	1985/86 settlement £m	1985/86 % of relevant expenditure	1985/86 % of grant
Relevant Expenditure	24 161			25 329		
Specific Grants	2 410	10.0	20.5	2 606	10.3	22.2
Supplementary Grants	166	0.7	1.4	170	0.7	1.4
Domestic Rate Relief	699	2.9	5.9	708	2.8	6.0
Block Grant	8 489	35.1	72.2	8 280	32.7	70.4
Total	11 764	48.7	100.0	11 764	46.5	100.0

Source: ACC (1986, p.33).

The rate support grant is itself divided into two parts – domestic rate relief grant; and the block grant. The domestic rate relief grant, or domestic element was introduced in 1967[8] and has been paid at the same rate of 18.5p in the pound for twelve years, including 1986/87. Richard Crossman, the Minister responsible for its introduction wrote at the time:

> The first item on my list was rating and how to shift the burden to taxes. I told [Harold Wilson] I had got into a dead-end because the Chancellor just hadn't the money. I therefore proposed to de-rate the domestic ratepayer. This is my own bright idea which Crocker, my Accountant–General, has accepted as a practical proposition at last. The idea is beautifully simple. If the Chancellor can only spare me £30 million a year in rate relief I am going to make sure that every penny of that £30 million relieves the domestic ratepayer; and that is going to be done by making him a special government grant which the shopkeepers and industry don't share. I got the P.M. into thoroughly good humour by telling him about this idea, which he immediately liked and regards as the sort of thing a Minister is there to invent[9].

However, domestic element is of small magnitude compared with the major element of the rate support grant: the block grant, which, as is shown in Table 6, represents seventy per cent of aggregate exchequer grant. Block grant is a residual element in the sense that it is made up of aggregate exchequer grant minus specific and supplementary grants and the domestic element. The block grant was introduced in 1981–82 and replaced the previously existing needs and resources elements of the rate support grant[10].

Unlike the domestic element, which is fixed by an authority's total domestic rateable value, block grant varies according to a local authority's level of spending[11]. In this discussion, a grant which varies with expenditure will be called a matching grant. In order to model local authority expenditure change it is necessary to take account of the form of block grant. Block grant is therefore described in detail. First, however, existing work on local authority expenditure modelling is briefly surveyed.

IV. LOCAL GOVERNMENT EXPENDITURE MODELS

A large number of expenditure models have been estimated for local government in the USA and Britain. A convenient starting point for this brief

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[8] C.D. Foster, R.A. Jackman, M. Perlman, *Local Government Finance in a Unitary State,* London 1980, p.194.

[9] R.H.S. Crossman, *The Diaries of a Cabinet Minister,* Vol. 1, London 1975, p.419.

[10] P.A. Watt, *The New Block Grant and Controls over Local Authority Capital Payments,* „Local Government Studies", March/April 1980, p.27–30; idem, *The 1981/82 Block Grant Settlement for England, ibidem,* March/April 1981, p.12–14.

[11] In King's suggested terminology it is an effort–related general grant, D.N. King, *Fiscal Tiers,* London 1984.

overview of previous work is Ohls and Wales (1972). Ohls and Wales estimate a cross section model of the supply and demand for state and local government services. They state that they „do not attempt to explain how the community demand curve is obtained" though „in practice [...] this demand curve must be obtained through the voting process". A further problem they encounter is that the price of local services is not directly observable. In order to proceed, they assume that the supply price of local expenditure is unaffected by quantity, but is a function of a number of demographic and factor price elements. Demand for local expenditures, on the other hand, is assumend to be a function of income, grant and the prince of expenditures. In detail, the following equations are postulated:
Supply:

$$P = a_1NM + a_2D + a_3W + a_4CHPOP \quad (1)$$

Demand:

$$Q = b_1 + b_2G + b_3Y + b_4P \quad (2)$$

Where:
P – price of state and local services (unobservable);
Q – quantity of state and local services (unobservable);
NM – the fraction of a state's population living in non–metropolitan areas 1966;
D – density of population per square mile 1968;
W – an index of wages of employees providing state and local services;
CHPOP– the ratio of population in 1960 to population in 1968;
G – per capita federal grants to states and localities, 1968;
Y – per capita personal income 1968.

The supply and demand Equations (1) and (2) cannot be directly estimated because P and Q are unobservable. However their product is observable as expenditure. Ohls and Wales therefore estimate (1) and (2) multiplied together for three sets of expenditure series: highways, education and local services.

Because of this unobservability of price and quantity, Ohls and Wales are not able to identify the coefficients of Equations (1) and (2), but they are able to arrive at the elasticities of demand and supply with respect to the explanatory variables.

Ohls and Wales's supply price equation is improved upon considerably by Strauss (1974) who sees the local tax rate as the relevant price that decision takers face:

a city council, given a tax base of known assessed value, may cut agency–proposed expenditure and/or raise the property tax rate when proposed expenditures exceed revenues. The property tax rate that is chosen equilibrates the demand pressures for additional services with the supply of revenue[12].

and

The property tax rate represents the political risk of a particular expenditure level, given population, income and block grants levels...it operates as a political price that the council faces[13].

Strauss sets out demand and supply equations for public expenditure of the following form:

$$E^d = b_1 + b_2Y + b_3P + b_4P_2 + b_5Trans + b_6t \quad (3)$$

and

$$E \equiv R + Trans \equiv tW + CAF + Trans \quad (4)$$

Where:
Y – money income,
P – population,
Trans– grant and income from fees and charges,
t – the local tax rate,
R – total revenues,
W – total local property value,
CAF – revenue from fees and charges.

Equation 4 is written as an identity because of the legal requirement to balance budgets on the revenue side. There is no equation to relate grant to expenditure because Strauss is describing a system using non–matching grants. A complicated estimation process yields values for the structural parameters of $b_5 = 1.573$ and $b_6 = -457 \times 10^6$. Thus grants are found to increase the demand for expenditure and tax rate increases are found to decrease demand for expenditure.

Ashford, Berne and Schramm (1976) follow Strauss's model rather closely. They hypothesise that local governments are

seeking to maximise social welfare subject to the simultaneous forces of available resources and community needs[14].

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[12] R.P. Strauss, *The Impact of Block Grants on Local Expenditure and Property Tax Rate*, „Journal of Public Economics" 1974, Vol. 3, p.270.

[13] *Ibidem*, p.271.

[14] D.E. Ashford, R. Berne, R. Schramm, *The Expenditure Financing Decision in British Local Government*, „Policy and Politics", 1976, Vol. 5, p. 5–24.

They argue that

> Since higher expenditure requires higher taxes, those making fiscal decisions in local government must simultaneously weigh the urgency of community needs against the ability of the community and others to provide resources for these needs, and then select a combination of expenditure and tax rate which they deem best for the community[15].

They postulate essentially the same expenditure demand and expenditure supply equations as Strauss, except that political control variables are added to the demand equation. However, their use of the same formulation as Strauss for the expenditure supply identity is, on its own, inadequate for the English data used because, account needs to be taken of the matching element of grant. This matching element was, in the period they studied, the resources element of the rate support grant. Thus in England, under the block grant[16] the authority's budget constraint is affected by the expenditure of the authority because of the matching element of grant and this complicates the expression of the budget constraint. Fiscal pressure expressions of the budget constraint take account of this matching element. This review of expenditure models is therefore briefly interrupted to introduce the concept of fiscal pressure.

Fiscal pressure is defined in Davies et al (1983) in the following way in relation to the Rate Support Grant (RSG) settlement:

> We suggest here that the only sensible expenditure level from which to measure the extent to which the RSG measure imposes the need for increased use of rates and balances is the actual level of expenditure of the local authority in the previous year [...] Given this starting position a primary measure of the severity of the RSG settlement is the rates/balances increase if the authority attempts to maintain a constant volume of services[17].

In this definition, fiscal pressure is defined as the year–on–year rate rise that would maintain last year's spending in real terms and is a function of grant changes and inflation. To compute this measure, a block grant model is used to calculate the rate rise for each authority that would result from raising expenditure by the rate of inflation. Because authorities face different budget constraints, there will be considerable variation across authorities in this measure.

The first use of a fiscal pressure variable in empirical work is Barnett (1986). Barnett defines his fiscal pressure variable as

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[15] *Ibidem.*

[16] And also under the former resources element of the rate support grant.

[17] E.M. Davies, J.G. Gibson, C. Game, J.D. Stewart, *Grant Characteristics and Central –Local Relations,* Birmingham 1983, p. 127–128.

the increase in the rate of local taxation that a local authority would have to levy if it sought to maintain in real terms the expenditure plans of the last period[18].

Barnett hypothesises that local authority expenditure is determined by factors including fiscal pressure and a pattern of incremental budgeting from past expenditure, and that political control can affect the relationship between fiscal pressure and expenditure. The model estimated later in this paper builds on the approach adopted by Barnett. Another author who uses an incremental approach is Bennett (1984), who argues that:

> The approach developed in this paper views decisions on local taxes and expenditures as essentially bureaucratic decisions [...] Local government decisions are not entirely incremental, however. They are subject to variable local demand and to constraints on the supply of revenue deriving from the size of the local tax base and intergovernmental transfers [...] In addition, it is hypothesised that local government decisions are informed by the desire to maximise some overall utility function[19].

Bennett concludes that

> The results of the analysis strongly confirm that a very large proportion of the expenditure level of local authorities in Britain is determined by rolling forward the decisions of previous years[20].

The model developed in this paper draws on several features of the works discussed above. Before setting out this model, the basic features of the local authority budget constraint are discussed, as determined by the block grant.

V. BUDGETARY CHOICE UNDER THE BLOCK GRANT

The budget constraint under the basic block grant[21] is described first. Next the more complicated budget constraint under targets and grant penalties is described and an approximate measure of the effect of these complicated changes in the grant system is developed. Thirdly, the expected effects of other variables seen as exerting influence on budgetary choice – namely local politics, and the published figures of GRE and target – are discussed.

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[18] R.R. Barnett, *Local Authority Expenditure Reactions to Losses in Grant Aid: the Case of Metropolitan District Councils,* „Government and Policy", 1986, Vol. 4, p. 136.

[19] R.J. Bennet, *A Bureaucratic Model of Local Government Tax and Expenditure Decisions,* „Applied Economics", 1984, Vol. 16, p. 257.

[20] *Ibidem,* p. 267.

[21] I.e. without targets and grant penalties.

VI. THE BUDGET CONSTRAINT: BASIC BLOCK GRANT

Basic Block Grant

In setting out the block grant system it will be convenient to work with variables scaled by population. The basic block grant per head (BG) of an authority is the difference between its total expenditure per head (TE)[22] and an amount it is deemed to raise by applying a standard tax effort to its property tax base. Local property taxes are levied by applying a tax effort termed the grant related poundage (GRP) to the property tax base.

This tax effort is an increasing function of the authority's total expenditure per head in relation to an assessment of its need to spend called its Grant Related Expenditure Assessment per head (GRE). GREs are determined by the government in consultation with the local authority associations, and are intended to be a benchmark of each authority's spending needs. They are constructed using an amalgam of regression analysis of past expenditure, consideration of unit costs and committee debate[23].

First the block grant of an authority is determined by a set of equations specified by the government in its annual Rate Support Grant Raport[24]. The authority's grant related poundage is determined by two alternative equations, depending on whether its total expenditure is above or below a threshold level of expenditure. Above the threshold level of expenditure (on average ten per cent above GRE) the rate poundage price of spending steepens. The two equations that determine GRP are, for authority i:

$$GRP_i = GRP^* + s_1(TE_i - GRE_i) \tag{5}$$

where expenditure is less than Threshold, and

$$GRP_i = GRP^* + s_1(THR_i - GRE_i) + s_2(TE_i - THR_i) \tag{6}$$

where expenditure is greater than Threshold.

Then GRP_i is used to define block grant in the following formula:

$$BG_i = TE_i - \frac{GRP_i GRV_i M_i}{100} \tag{7}$$

[22] I.e. all spending left to be met on revenue account after receipt of other grants.

[23] *Associacion of County Councils,* Rate Support Grant, London 1985.

[24] The particular values in the formula quoted here are for 1984–85.

Where:
BG_i – the block grant claim of local authority i (£ per head),
TE_i – the total expenditure of local authority i (£ per head),
GRE – the grant–related expenditure assessment of authority i (£ per head),
GRV_i – the gross rateable value of local authority i (£ per head),
M_i – the multiplier for local authority i,
GRP_i – the grant related poundage (in pence) for local authority i,
GRP* – the grant related poundage for spending equal to GRE,
THR_i – the threshold expenditure for local authority i (£ per head).

When an authority is spending at its grant related expenditure assessment, Equation 5 determines GRP, $TE_i - GRE_i = 0$ and hence $GRP_i = GRP^*$[25].

GRP* can be seen as the benchmark level of rate poundage that corresponds to the benchmark need to spend (GRE) and is set by Secretary of State for the Environment annually in the Rate Support Grant Report. Full rate poundage equalisation would be achieved should all authorities spend at GRE because GRP*, which is set by class of authority, sums by tier of local authority to the same rate poundage for ratepayers throughout England.

Above threshold the rate poundage cost of spending, dGRP/dTE, is raised from s_1 to s_2, an effect known as taper[26]. Two further conditions set on the grant system are firstly that the grant–related poundage cannot be below zero[27] and that grant cannot be negative, but is set to zero should the Equation 7 yield a negative grant.

Conceptually, the block grant can be split into two components–lump–sum and matching[28] – similar respectively to the replaced needs element and resources elements of the previous rate support grant system. The rate of matching, or marginal rate of grant can be found by taking the derivative of (7) with respect to total expenditure:

$$\frac{dBG_i}{dTE_i} = 1 - \frac{(dGRP/dTE_i).\,GRV_i.\,M_i}{100} \qquad (8)$$

where $dGRP/dTE_i$ is s_1 below threshold, and s_2 above threshold. This rate of matching can be negative[29] and this occurred, for example, on expenditure below threshold for those authorities where GRV.M was greater than £166.6

[25] Balances will be assumed to remain constant in this discussion.

[26] E.g. increased 25% from 0.6p to 0.75p for 1984–85.

[27] Were this to be the case, grant receipts would be so high as to allow a negative rate to be set – i.e. payment would flow from the authority to the ratepayer.

[28] See *Society of County Treasurers, Block Grant Indicators 1981–1982,* Northallerton 1981.

[29] This contrasts with the situation under the old resources element grant where the lowestrateof matching was zero.

per head and on expenditure above threshold for those authorities where GRV.M was greater than £133.3 per head for 1984/85. The multiplier, M_i is a device that enables the Secretary of State to modify the effective GRV of each authority for the purposes of year–on–year safety–netting and London equalisation. From here on, multipliers will be assumed to be equal to one to reduce notational clutter, though they are taken account of in the empirical work later. To the same end, the i subscript is also dropped.

The lump–sum, or fixed element of block grant is defined (by the Society of County Treasurers (1981)) as the amount of grant receivable if GRP is equal to zero. If GRP is zero, grant is equal to total expenditure. Hence the fixed element can be found by substituting GRP = 0 Equation 5 and solving for TE, which at this point of the schedule is equal to grant. Thus:

$$\text{Fixed Element} = \text{GRE} - (\text{GRP}^*/s_1) \qquad (9)$$

Some features of the grant system can be shown diagrammatically. Figure 1 shows a grant receipts function $OA_1A_2A_3Z$ for authority A. The section of the function A_1A_2 occurs where expenditure is below threshold. The marginal

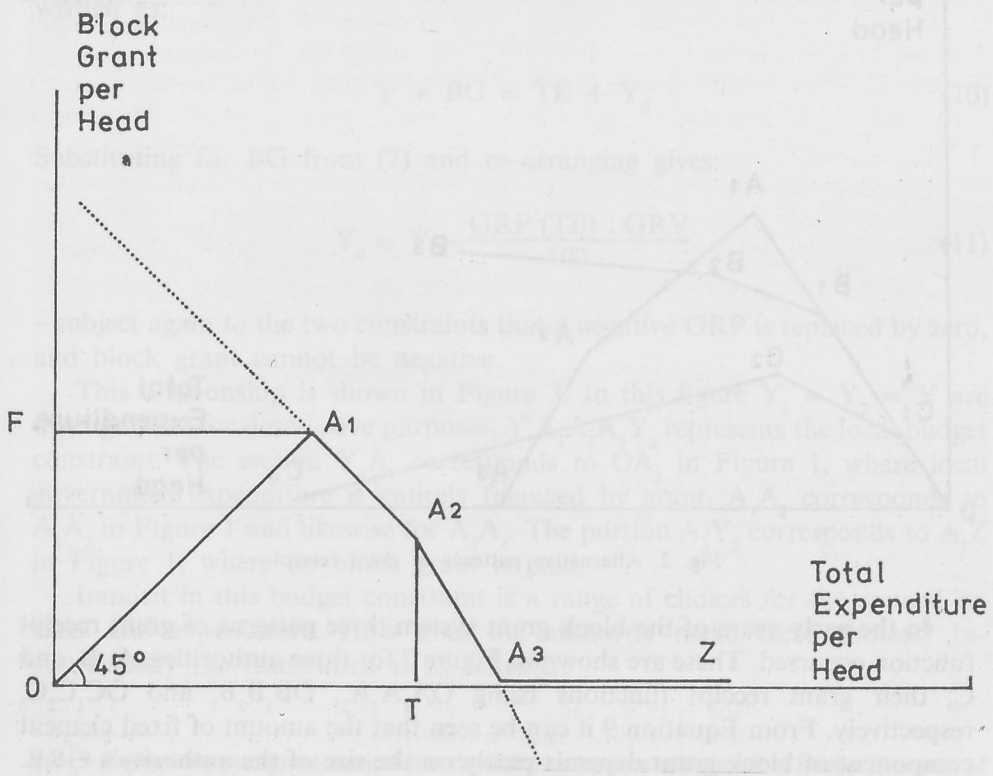

Fig. 1. Grant receipts function for authority A

rate of grant as expressed by Equation 8 is negative, shown by the slope. For section A_2A_3 expenditure is above the threshold level OT and the negativeslope steepens, caused by the rise of dGRP/dTE from s_1 to s_2 in Equation 8. To the left of A_1A_2 the block grant Equation 7 would indicate a grant function marked by the dotted line in the diagram. However, this section is also to the left of the forty–five degree line OA_1, where grant receipts would exceed expenditure – a situation prohibited by statute. Hence, for this range, grant receipts are set equal to expenditure and the function is given by OA_1.

The fixed element of the grant, discussed above is OF, defined by the point where A_1A_2 meets the forty–five degree line and rate poundage first becomes zero as expenditure falls. Lastly for all expenditures above A_3 the authority receives no grant. At these points, the grant, as determined by formula, would be negative, as shown in the diagram by the dotted line below the horizontal axis. Statute prevents this, and grant is set to zero along the section A_3.

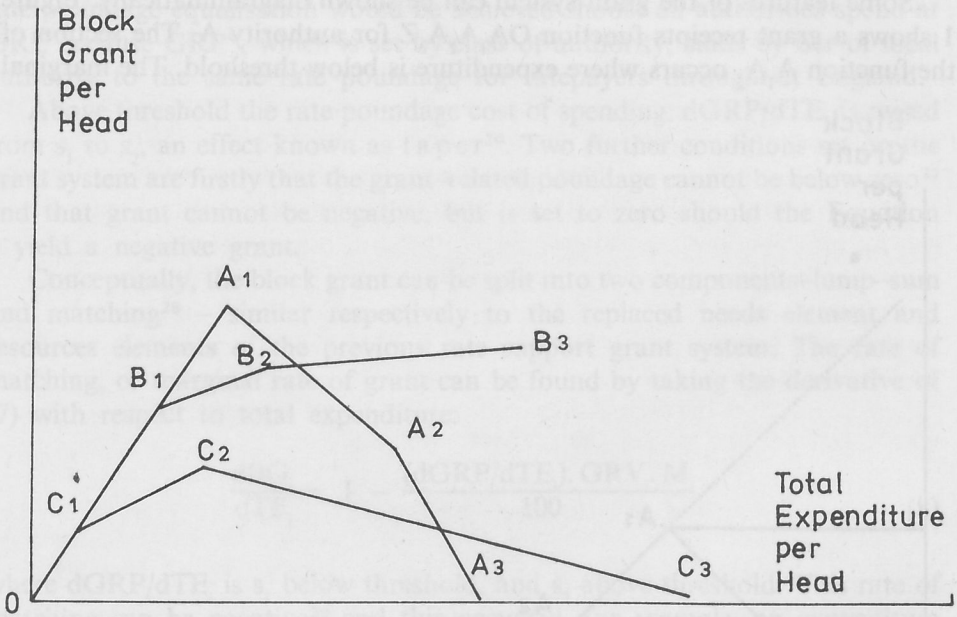

Fig. 2. Alternative patterns of grant receipt

In the early years of the block grant system three patterns of grant receipt function occurred. These are shown in Figure 2 for three authorities, A, B, and C, their grant receipt functions being $OA_1A_2A_3$, $OB_1B_2B_3$ and $OC_1C_2C_3$ respectively. From Equation 9 it can be seen that the amount of fixed element component of block grant depends partly on the size of the authority's GRE. Threshold is set at approximately ten per cent above GRE, and corresponds to

the kinks A_2 B_2 and C_2 on each schedule. It can therefore be seen from the diagram that authority A has the highest GRE and fixed element, and C has the lowest.

The most important determinant of the slope of the schedules, expressed in Equation 8 is the authority's rateable value per head, GRV. Authority A has the largest rateable value per head, which generates negative marginal grant on all its expenditure above its fixed element, with the rate of loss increasing beyond threshold. Authority B has the lowest rateable value per head and receives positive marginal grant on all expenditure, although at a decreased rate above threshold. Authority C is intermediate with respect to rateable value per head and receives positive marginal grant below threshold, and negative marginal grant above threshold[30].

The block grant equations affect the budget constraint for a local authority area by supplementing total local resources. Assuming, for simplicity, that block grant is financed from central funds not collected from the local authority area, the local resources of the area per head can either be spent on local government expenditure per head (TE), or private goods per head (Y_d). If the level of resources before grant is Y, the local budget constraint can be written as:

$$Y + BG = TE + Y_d \tag{10}$$

Substituting for BG from (7) and re-arranging gives:

$$Y_d = Y - \frac{GRP\ (TE)\ .\ GRV}{100} \tag{11}$$

– subject again to the two constraints that a negative GRP is replaced by zero, and block grant cannot be negative.

This relationship is shown in Figure 3. In this figure $Y_1 = Y_2 = Y$ are distinguished for descriptive purposes. $Y_1A_1A_2A_3Y_2$ represents the local budget constraint. The section Y_1A_1 corresponds to OA_1 in Figure 1, where local government expenditure is entirely financed by grant. A_1A_2 corresponds to A_1A_2 in Figure 1 and likewise for A_2A_3. The portion A_3Y_2 corresponds to A_3Z in Figure 1, where no block grant is paid.

Implicit in this budget constraint is a range of choices for the council on rates and expenditure. How does the authority make these choices? Institutionally the framework is as follows.

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[30] Authorities with grant receipts functions like authority could therefore receive over part of the range, the same level of grant for two different expenditure levels.

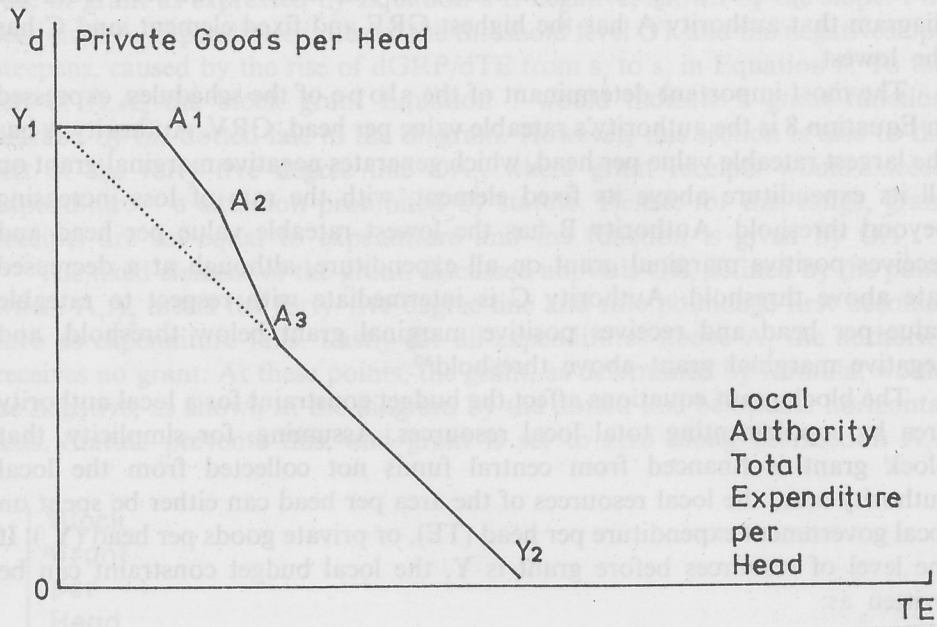

Fig. 3. The local budget constraint

VII. LOCAL AUTHORITY BUDGET DECISION—MAKING

Formally the local authority budget decision is made by its councillors. This paper examines budget decision–making within a utility maximising framework, it will therefore be of interest to focus on the utility function of the median Councillor.

A local authority's budget, with its implied rate levy is usually decided by Council in its March meeting[31]. The budget, which is presented to Council for approval is the product of estimates from spending departments which typically have been subject to scrutiny and revision by the Finance Committee with the assistance of the Treasurer. The median Councillor's preferences are therefore likely to come under bureaucratic influences. Central government influence is also possible. A report will often be produced by the Treasurer setting out Government guidelines, such as the authority's GRE and Target and sometimes sketching out the implications of following these guidelines[32].

[31] J. N. Dezinger, *Making Budgets,* London 1978, p. 150.

[32] R. Greenwood, *Fiscal Pressure and Local Government in England and Wales,* [in:] C. Hood, M. Wright, *Big Government in Hard Times,* Oxford 1981, p. 82.

Greenwood (1981) found that councillors' responses to Government guidelines varied between authority in his sample of twenty authorities – in one authority councillors consistently denied their importance – and it is difficult to view conformity to often–conflicting guidelines yielding any strong utility to councillors.

The median Councillor is likely to be at least partly motivated by the desire to be re–elected and will to this extent attempt to follow the preferences of the median voter. Because elections occur infrequently, and are held for bundles of issues, there is scope for the pursuit of Party objectives that may not be desired by the elector in addition to the influence of central government, bureaucrats and other interest groups.

Models of local authority budgetary decision–making constructed by economists and political scientists frequently involve utility maximisation, though there are differences in the source of the preference structure. Foster, Jackman and Perlman (1980, p. 288) take a median voter approach:

> we shall simply assume that local government expenditure decisions do reflect the preference of the local community. We shall further identify the local community with some average or representative voter whose preferences and financial resources are taken as characteristics of the community as a whole.

However, Wilde (1968, pp. 340–341) relies simply upon a more permissive approach:

> Assume that this local governing body has a set of preferences for goods and services, both social and private, and that such preferences are consistent. Such consistency would mean that a normal indifference map could be taken to represent those preferences. (It should be noted that this indifference map resembles that of an individual in being convex to the origin and non–intersecting, but is not assumed to be part of a «social map» or part of a «social welfare function». This map is not assumed (necessarily) to represent the true preferences of the citizenry).

In the model proposed here, decision–making is assumed to be vested in an individual local authority decision–maker whose preferences reflect those of both the median Councillor and the other interests suggested above, and who aims to maximise utility subject to the local authority budget constraint.

It is well known that budgeting procedures usually work from the previous year's budget as a base[33] and the importance of the existing budget is recognised here in that it is assumed that key elements in the decision–maker's utility function are c h a n g e s in the local authority's expenditure and c h a n g e s in its rate poundage. The budget constraint is therefore re–stated in the next section, firstly in terms of feasible r a t e – e x p e n d i t u r e combinations, and then in terms of feasible c h a n g e s in rates and expenditure.

[33] Dazinger, *op. cit.*

VIII. THE CONSTRAINT IN TERMS OF RATES AND EXPENDITURE

In Figure 4 rate poundage (GRP) is shown as a function of total expenditure by a rate–expenditure (RE) function. The points $OA_1A_2A_3Z$ correspond to points $OA_1A_2A_3Z$ in Figure 1 and to $Y_1A_1A_2A_3Y_2$ in Figure 3.

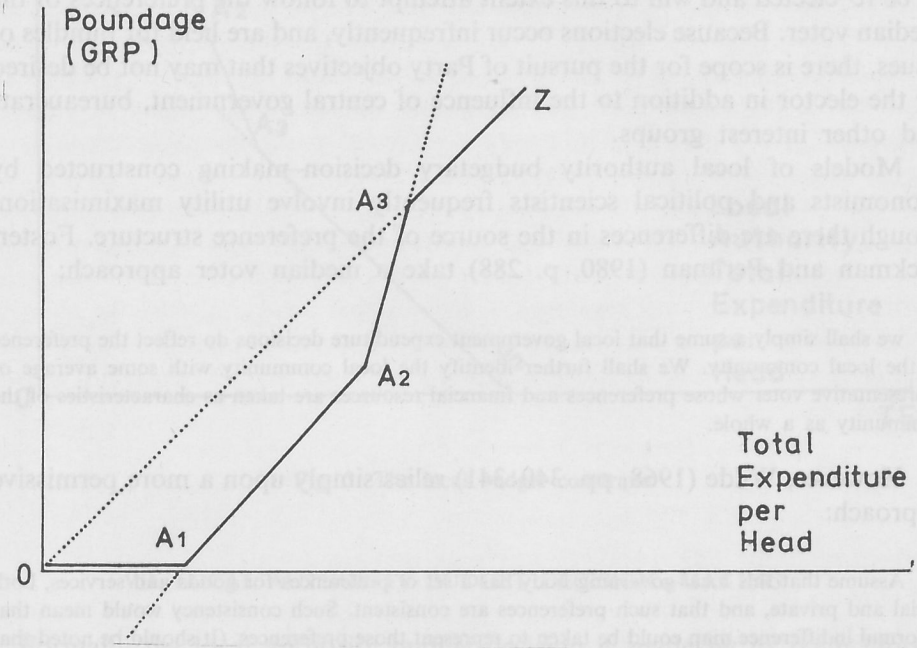

Fig. 4. Rate poundage as a function of total expenditure

Thus on the section OA_1 no rate poundage is levied, as Equation 5 would indicate a negative GRP (as shown by the dotted line projected below the horizontal axis) and this is prevented by statute. OA_1 is equal to the fixed element of grant defined above. On the section A_1A_2, rate poundage rises by $s_1 = dGRP/dTE$ for every pound per head increase in TE. On the section A_2A_3 expenditure is above threshold and poundage rises at the rate of s_2 until at point A_3 all grant is exhausted, and the poundage then rises at the rate $100/GRV$[34]. The dotted projection of A_2A_3 represents negative block grant that can be generated by Equations 6 and 7 but is prevented by statute. Figure 4 is determined by Equations (5) and (6), plus the two constraints on non–negative GRP and BG.

[34] For authorities of type B in Figure 2 this last section is absent as the section A_2A_3 is less steep than OA_3 and thus does not ever cross OA_3.

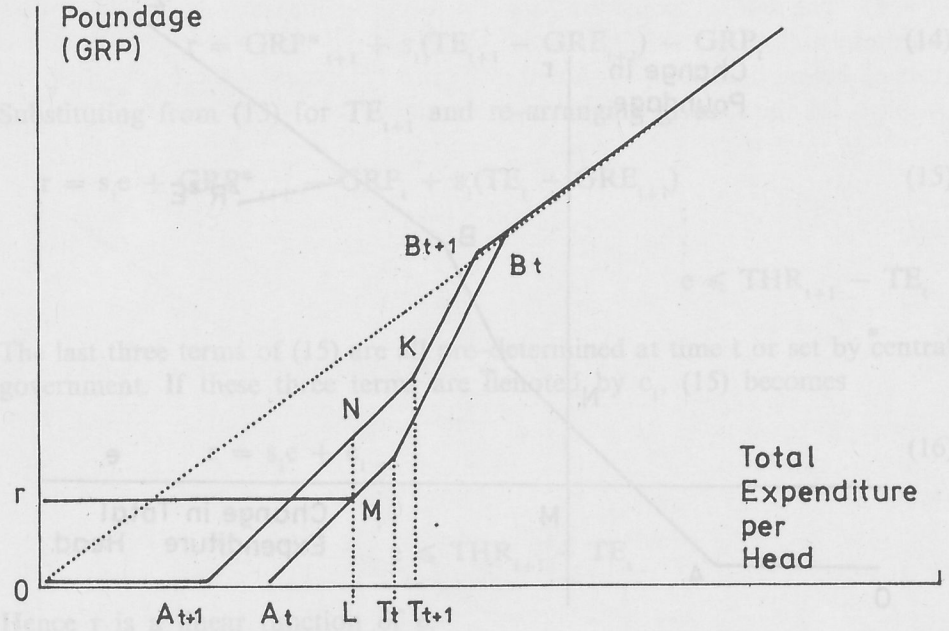

Fig. 5. Rate expenditure function for successive years

Figure 5 is similar to Figure 4 but shows the relationship between rate poundages and expenditure for a hypothetical local authority for two successive years – A_tB_t for year t and $A_{t+1}B_{t+1}$ for year t+1. The authority has a higher threshold in the second year (T_{t+1}), than in the first year (Tt). As drawn, dGRP/dTE is the same in both years, and thus the two RE functions are parallel. The difference between the RE functions is in fhreshold and fixed element.

The difference in fixed element, determined by Equation 9 is composed of a rise in GRE that has increased threshold, and an increase in GRP*. For simplicity zero population change is assumed.

Figure 6 can be derived from Figure 5 to show the relationship between expenditure changes and rate poundage changes (▪R▪E).Thus, the vertical axis of Figure 6 shows changes in rate poundages and the horizontal axis shows changes in expenditure levels per head. In order to generate the ▪R▪E function of Figure 6 some initial level of expenditure for year t must be assumed. Assume therefore that OL is the budget in year t. The resulting rate level for year t (Or) is read off the RE function in Figure 5 at M. Starting from this rate level in year t, a zero expenditure change in year t+1 will lead to

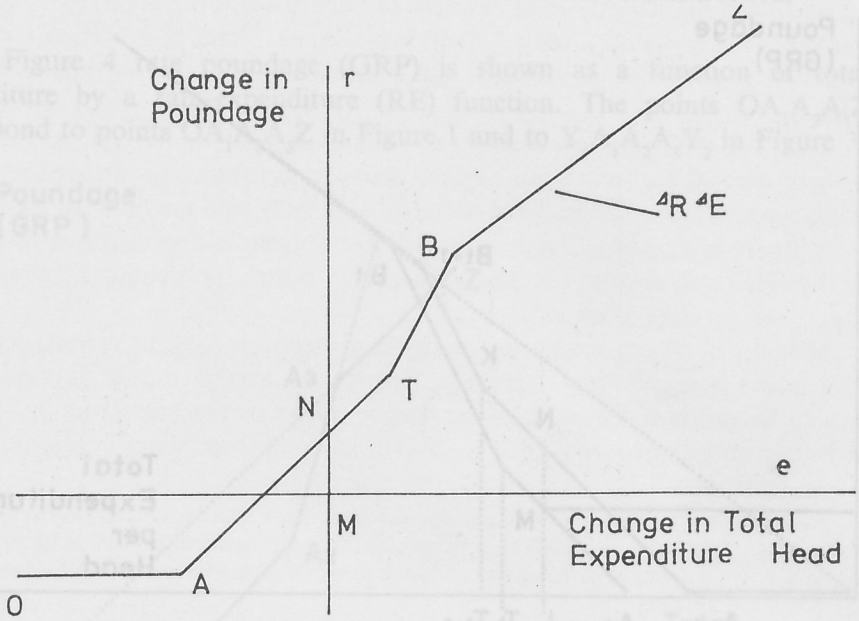

Fig. 6. Change in poundage against change in expenditure

a rate increase of MN – shown in both Figure 5 and Figure 6. As expenditure is increased along the horizontal axis from the origin on Figure 6, rates rise according to the slope of $OA_{t+1}KB_{t+1}Z$ and ▪R▪E is traced out. In effect $OA_{t+1}KB_{t+1}Z$ is drawn out on Figure 6 with the point M in Figure 5 moved to the origin of Figure 6.

The equation of the ▪R▪E function can be derived algebraically as follows. Define

$$r \equiv GRP_{t+1} - GRP_t \tag{12}$$

and

$$e \equiv TE_{t+1} - TE_t \tag{13}$$

where time t is defined such that at time t, GRP_t and TE_t are pre– determined, but TE_{t+1} is a choice variable to the local authority. Thus the authority has a range of budget options for TE_{t+1} and the consequent GRP_{t+1} which are determined by the function drawn in Figure 6. This function changes above threshold. Below threshold, along the segment AT, $TE_{t+1} \leqslant THR_{t+1}$ (i. e. $e \leqslant THR_{t+1} - TE_t$).

Substituting from (5) for GRP_{t+1}, $r = GRP_{t+1} - GRP_t$ can be written as:

$$r = GRP^*_{t+1} + s_1(TE_{t+1} - GRE_{t+1}) - GRP_t \tag{14}$$

Substituting from (13) for TE_{t+1} and re–arranging gives

$$r = s_1 e + GRP^*_{t+1} - GRP_t + s_1(TE_t - GRE_{t+1}) \tag{15}$$

$$\vdots$$

$$e \leqslant THR_{t+1} - TE_t$$

The last three terms of (15) are all pre–determined at time t or set by central government. If these three terms are denoted by c_1, (15) becomes

$$r = s_1 e + c_1 \tag{16}$$

$$\vdots$$

$$e \leqslant THR_{t+1} - TE_t$$

Hence r is a linear function of e.

Similar algebra for expenditure increases above THR_{t+1} (along segment TB in Figure 6) yields a second linear function of e:

$$r = s_2 e + c_2 \tag{17}$$

$$\vdots$$

$$e > THR_{t+1} - TE_t$$

where

$$c_2 = GRP^*_{t+1} - GRP_t + s_1(THR_{t+1} - GRE_{t+1}) + s_2(TE_t - THR_{t+1})$$

The segments OA (in Figure 6) corresponding to a zero rate poundage, and BZ corresponding to zero block grant, although shown in Figure 6, are not relevant to the later empirical work as no local authorities in the sample were located on this part of their budget constraint. The relevant budget constraint to the local authority decision–maker, ATB is therefore piecewise–linear and, because $s_1 > s_2$, the budget set is convex.

Suppose now that the local authority decision–maker discussed above can be characterised as seeking to maximise a strictly quasi–concave utility function U (e,r), where increases in expenditure, e, are considered as „goods"

and increases in rate poundage, r, are considered „bads"[35] so that $U_e > O$ and $U_r < O$. The budget constraint for the decision–maker will be (16) below threshold and (17) above threshold. Consider the case where equilibrium is reached below threshold, as shown in Figure 7. Dropping the 1 subscript, the problem for the local authority decision–maker can be written as max U(e,r) s. t. $-se + r = c$.

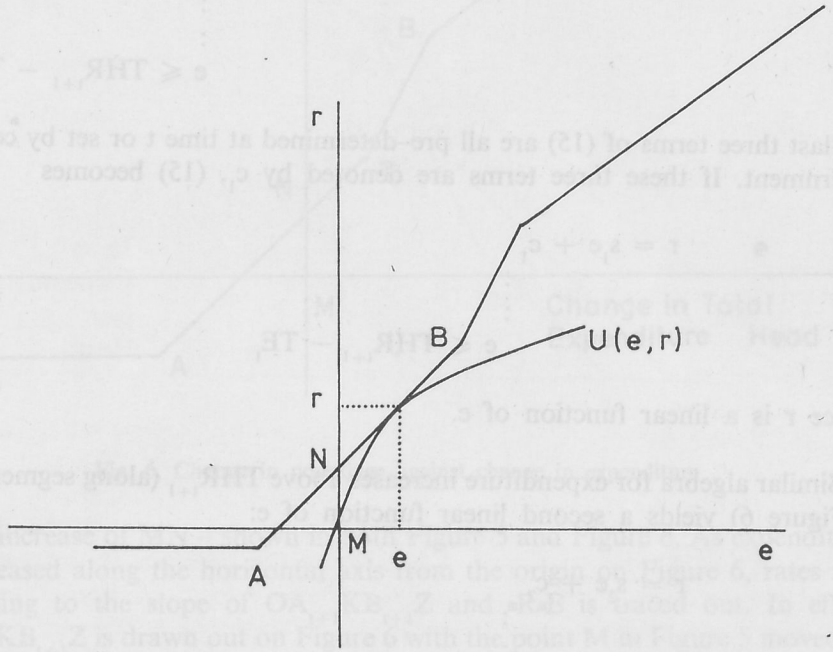

Fig. 7. Utility maximisation subject to budget constraint

Forming the Lagrangian $L = U(e,r) + \lambda(c + se - r)$, the first–order conditions are:

$$L_\lambda = c + se - r = O \tag{18a}$$

$$L_e = U_e + \lambda S \quad = O \tag{18b}$$

[35] This approach follows J. P. Sonheimer, *Spending Cuts or Local Tax Increases? An Analysis of Local Authority Preferences in England*, „Government and Policy" 1986, Vol. 4, p. 145, 153. See J. M. Buchanan, D. R. Lee, *Tax Rates and Tax Revenues in Political Equilibrium: Some Simple Analytics*, „Economic Inquiry" 1982, Vol. 20, p. 344–354 for a similar assumption used in a different context.

$$L_r = U_r - \lambda \quad = O \tag{18c}$$

which gives $s = -U_e/U_r$ at the tangency point $(\bar{e}, \bar{r})$.

At the equilibrium $(\bar{e}, \bar{r})$,

$$c + s\bar{e} - \bar{r} \equiv O \tag{19a}$$

$$U_e(\bar{e},\bar{r}) + \bar{\lambda}s \equiv O \tag{19b}$$

$$U_r(\bar{e},\bar{r}) - \bar{\lambda} \equiv O \tag{19c}$$

Taking the total differential yields:

$$sd\bar{e} - d\bar{r} = -\bar{e}ds - dc \tag{20a}$$

$$sd\bar{\lambda} + U_{ee}de + U_{er}dr = -\bar{\lambda}ds \tag{20b}$$

$$-d\bar{\lambda} + U_{re}d\bar{e} + U_{rr}d\bar{r} = O \tag{20c}$$

To investigate the comparative statics of this model, consider first the effect of a change in intercept c. To do this let $ds = O$ to keep the slope constant in (20) above, and divide through by dc. In matrix form this yields:

$$\begin{bmatrix} O & s & -1 \\ s & U_{ee} & U_{er} \\ -1 & U_{re} & U_{rr} \end{bmatrix} \begin{bmatrix} \delta\bar{\lambda}/\delta c \\ \delta\bar{e}/\delta c \\ \delta\bar{r}/\delta c \end{bmatrix} = \begin{bmatrix} -1 \\ O \\ O \end{bmatrix} \tag{21}$$

which can be solved via Cramer's rule to give:

$$e = \frac{1}{|J|}\begin{vmatrix} s & U_{er} \\ -1 & U_{rr} \end{vmatrix} \tag{22}$$

and

$$r = \frac{-1}{|J|}\begin{vmatrix} s & U_{ee} \\ -1 & U_{re} \end{vmatrix} \tag{23}$$

where |J| is

$$\begin{vmatrix} O & s & -1 \\ s & U_{ee} & U_{er} \\ -1 & U_{re} & U_{rr} \end{vmatrix}$$

How are these equations to be interpreted? The constant c is the level of increase of rates that must be charged for a zero increase in expenditure. As c rises, the budget of the decision-maker available to finance either expenditure increases or rate reductions, falls. The constant c is therefore analogous to the negative of income in price theory. For this reason the marginal utility of an increase in the constraint c, represented by λ is negative, as from Equation 19c, $\bar{\lambda} = U_r(\bar{e},\bar{r})$ and $U_r < O$ by assumption. It is assumed here that rate-reductions and expenditure-increases are both superior goods[36] and that consequently $\partial^e/\partial^c < O$. This sign is the opposite to the income effect of consumer theory as c represents negative income.

Pursuing the analogy with consumer theory, s is the rate increase „price" of increasing expenditure. To consider the effect of a change in price s, let dc = O and divide the equations (20) by ds:

$$\begin{bmatrix} O & s & -1 \\ s & U_{ee} & U_{er} \\ -1 & U_{re} & U_{rr} \end{bmatrix} \begin{bmatrix} \delta\bar{\lambda}/\delta s \\ \delta e/\delta s \\ \delta r/\delta s \end{bmatrix} = \begin{bmatrix} -\bar{e} \\ -\bar{\lambda} \\ O \end{bmatrix} \tag{24}$$

Solving for $\delta\bar{e}/\delta s$ by Cramer's rule gives

$$\frac{\delta\bar{e}}{\delta s} = \frac{\bar{e}}{|J|}\begin{vmatrix} s & U_{er} \\ -1 & U_{rr} \end{vmatrix} - \frac{\bar{\lambda}}{|J|}\begin{vmatrix} O & -1 \\ -1 & U_{rr} \end{vmatrix} \tag{25}$$

[36] I. e. an increase in income leads to an increase consumption-see *Intriligator M. D. Mathematical Optimization and economic Theory*, Englewood Cliffs 1971, p. 159.

This result is analogous to the Slutsky equation of consumer theory. The first term is the income effect of the price change of the good expenditure-increases, e, whose price is an increase in the rates of s for every unit of e. This can be verified by noting that the first term is equal to e times Equation 22. The second term is the income-compensated price effect, and this latter point can be shown by setting the income change resulting from a price change: $-\bar{e}ds = O$, as well as $-dc = O$ in Equation (20a). Equation (24) then becomes

$$\begin{bmatrix} O & s & -1 \\ s & U_{ee} & U_{er} \\ -1 & U_{re} & U_{rr} \end{bmatrix} \begin{bmatrix} \delta\bar{\lambda}/\delta s \\ \delta\bar{e}/\delta s \\ \delta\bar{r}/\delta s \end{bmatrix} = \begin{bmatrix} O \\ -\bar{\lambda} \\ O \end{bmatrix} \tag{26}$$

Solving for e/s by Cramer's rule gives

$$\left(\frac{\delta\bar{e}}{\delta s}\right)_{\text{compensated}} = \frac{\begin{vmatrix} -\bar{\lambda} & O & -1 \\ & & \\ & -1 & U_{rr} \end{vmatrix}}{|J|} = \frac{\bar{\lambda}}{|J|} \tag{27}$$

As shown above $\bar{\lambda} < O$, and $|J|$ is positive if the secound-order conditions for utility maximisation are assumed satisfied, hence the income-compensated substitution effect is negative.

Equation (25) may be re-written as

$$\left(\frac{\delta\bar{e}}{\sigma s}\right) = \left(\frac{\delta\bar{e}}{\delta c}\right)\bar{e} + \left(\frac{\delta\bar{e}}{\delta s}\right)_{\text{compensated}} \tag{28}$$

The overall effect is negative, $\frac{\delta\bar{e}}{\delta c}$ is negative by the assumption that e can be considered as a superior good, and c can be considered as negative income, and it has been demonstrated that $\left(\frac{\delta\bar{e}}{\delta s}\right)_{\text{compensated}}$ is negative.

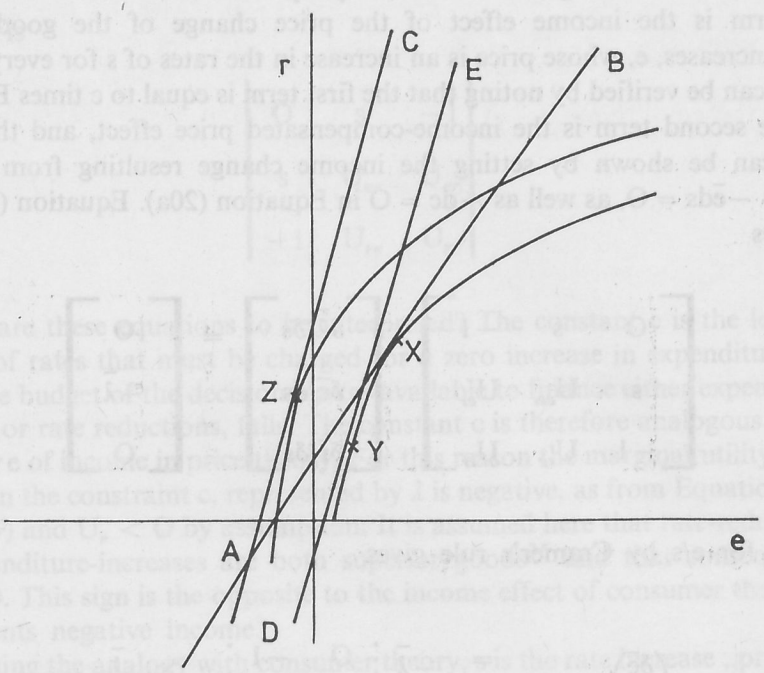

Fig. 8. Income and substitution effects of slope change

These effects can be shown diagrammatically. In Figure 8 the effect of a change in slope of the budget line is split into an income and substitution effect. To simplify the diagram, only the portion of the budget constraint corresponding to AB in Figure 7 is shown. The initial budget constraint is AB and equilibrium is at X. The rate price of extra spending s_1 is then assumed to rise and the budget line becomes AC with a steeper slope. The point A is obtained by solving the two ${}^4R^4E$ functions generated by Equation 15 with the two values for s_1, for common r and e, and can shown to occur at $r = GRP^*_{t+1} - GRP_t$ and $e = TE_t - GRE_{t+1}$[37]. The change in slope has an income effect for all points on the new budget constraint other than A. The p u r e effect of a slope-change can be seen by considering the compensated slope change, represented by the budget line DE which has the new steeper value for s_1 but has c adjusted so that utility remains constant. The compensated equilibrium moves to Y. Hence XY represents the sub-

[37] The point A may not exist in terms of actual grant payment if the constraint $BG \geqslant O$ which generates the horizontal portion of the ${}^4R^4E$ function (as shown in Figure 6) comes into play before the two functions cross. Nevertheless the point A is still valid as a geometric construction point.

stitution effect of an increase in s_1 and is negative. If the income compensation is then removed, the budget constraint becomes AC and the income effect of the price change is represented by YZ. The total effect of the price change is XZ, made up of a negative substitution effect XY and income effect (assumed negative).

To summarise the above discussion, the options available to a local authority's decision-makers have been shown to be expressible in the form of $^4R^4E$ functions. These function are piecewise-linear and, on any section, firstly expenditure has been shown to be negatively affected by the slope of the $^4R^4E$ curve with $\delta e/\delta s < O$ and secondly expenditure has been assumed to be susceptible to a superior income effect (Intriligator, 1971, p. 159) in being negatively affected by the height of the curve $\delta e/\delta c < O$. However, the budget constraint, as set out so far leaves out the effect of targets and penalties, a major element of the system as operated up to 1985/86. These are now described.

Expenditure Targets and Grant Penalties

Expenditure targets are set for each local authority by the government on the basis of past expenditure. Exceeding target expenditure invokes small grant penalties from authorities classified as low spenders and larger grant penalties from authorities classified as high spenders[38]. The criterion for this classification has been previous budgeted expenditure in relation to target and/or GRE, with GRE becoming relatively more important in the later rules[39].

Grant penalties take the form of an addition to GRP in the block grant claim Equation 7. The addition depends on the percentage expenditure above target. Penalties have become larger in each successive year and their effect on the marginal rate of grant has become much heavier than the effect of taper above threshold on grant support. Tabele 7 shows the addition to GRP for overspending target at the ratepayer level for the financial years 1982/83 to 1985/86.

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[38] *Association of Country Councils,* Rate Support Grant, London 1984.

[39] There has been a tendency, caused by the basing of targets on previous budgets, combined with constraints on the year-on-year reductions required, for the increase in targets to be positively related to past expenditure increases. This has left a pattern where the relationship of target to GRE depends predominantly on past spending patterns by an authority. High spending by authorities in relation to GRE tends to result in targets well above GRE, and vice versa for low spending authorities, and this has resulted in targets being relatively large in relation to GRE in

Table 7

Grant Penalties 1982/83 to 1985/86: rate of addition to GRP

Percentage Expenditure above target	Rate of addition to GRP per percentage point overspend			
	1982/83	1983/84	1984/85	1985/86
0–1	3p	1p	2p	7p
1–2	3p	1p	4p	8p
2–3	3p	5p	8p	9p
3–4	3p	5p	9p	9p
4–5	3p	5p	9p	9p
Each subsequent 1%	zero	5p	9p	9p

The reason why penalties have become more severe year by year has been put as follows in a commentary on the 1985/86 RSG settlement:

> First targets must get tougher year by year if they are to have any effect. Once an authority has incurred a penalty it is built into its rate demand, and, all other things being equal, it could incur a similar level of penalty the next year without increasing its rate. Secondly, the increased severity of the penalties is designed to eradicate overspending caused by a large number of authorities exceeding their target by up to 2%[40].

Targets and grant penalties have introduced further detail into the relationship between expenditure and rates set out above under the basic block grant system. The penalty for the first increment of overspending target changes the slope and the intercept of the RE function although it remains linear. Hence if target is above threshold, Equation 6 for RE function becomes.

$$GRP = GRP^* + s_1(THR - GRE) + s_2(TE - THR) + 100.P.\frac{(TE - TGT)}{TGT} \quad (29)$$

where P is the appropriate rate of addition to GRP selected from Table 7. Thus, in Figure 4 the RE function for 1983/84 will have six linear segments instead of four linear segments as shown, the extra two segments being at

London and relatively low for non-metropolitan Countries. *Audit Commission, The Impact on Local Authorities Economy, Efficiency and Effectiveness of the Block Grant Distribution System,* London 1984.

[40] *Association of Metropolitan Authorities,* London 1985, p. 11.

target and at target plus two per cent. It follows from this that each $^{4}R^{4}E$ function will have six kinks in 1983/84. In 1984/85 the number of kinks increased to seven. The equations of the $^{4}R^{4}E$ functions can be derived as:

$$r = \frac{(s_k + 100.P).e + c_k + 100.P(TE_t - TGT_{t+1})}{TGT_{t+1}} \qquad (30)$$

where TGT_{t+1} is the target for year $t+1$ and $k=1$, or 2, depending on whether the authority is above or below threshold. The $^{4}R^{4}E$ budget constraint will be of the form ABCDEFGH of Figure 9. It remains piecewise-linear, and because successive penalties increase its slope[41] the budget set remains convex over its relevant range BCDEFG in Figure 9[42].

Locally, over each segment the comparative statics results obtained from that optimisation, $\delta e/\delta s < O$ and $\delta e/\delta c < O$, will hold. Furthermore, the discussion by Moffitt (1986) shows that for a piecewise-linear budget constraint, defining a convex budget set, the comparative statics results obtained above hold, with the exception that income and price effects may also be zero if the local authority decision-maker „sticks" at a kink on the budget constraint. The comparative statics results become $\delta e/\delta s \leqslant O$ and $\delta e/\delta c \leqslant O$.

How is the effect of this complicated budget constraint to be incorporated in the expenditure modelling? One way of proceeding is to bring the full constraint explicitly into the estimation procedure using maximum-likelihood methods[43]. In this paper however, a more limited task is undertaken based on

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[41] An exception to this occurs for the year 1982/83 which is the authorities that spent above GRE and over 5% above Target. 12 (out of 36) metropolitan Districts and 9 (out of 39) non-metropolitan Counties came into this category in 1982/83 and for this year these authorities budget sets are not convex.

[42] The increases in the slope of the RE function, and hence the slope of the $^{4}R^{4}E$ functions, are greater than those induced by the block grant taper discussed above. Thus, in 1984/85, after splitting the ratepayer level addition to GRP in non-metropolitan areas, the penalty addition to GRP for non-metropolitan Counties per percentage point of spending above target was 1.7471 p for up to one per cent overspend, 3.4942 p for the second percentage overspend, 6.9885 p for the third percentage point overspend, and 7.8620 p above this. In 1984/85 the average GRE for the non-metropolitan Counties was £340 per head and average target was £330 per head. The slope of the $^{4}R^{4}E$ function, in the absence of targets and penalties, would be either $s_1 = 0.6$ or $s_2 = 0.75$, depending upon whether the authority was above or below threshold. If the authority was in the third per cent above threshold the additional slope caused by traget penalties would be 100 P (TGT $= 100 \times 6.9885$) $330 = 2.12$ for a County With average target which dwarfs the effect of s_1 or s_2.

[43] R. R. Barnett, R. Levaggi, P. Smith, *Local Authority Expenditure Decisions: a Maximum Likelihood Analysis of budget Setting in the Face of pi cewise Linear Budget Constrains,* University of York, „Discussion Paper" 1988, No. 129.

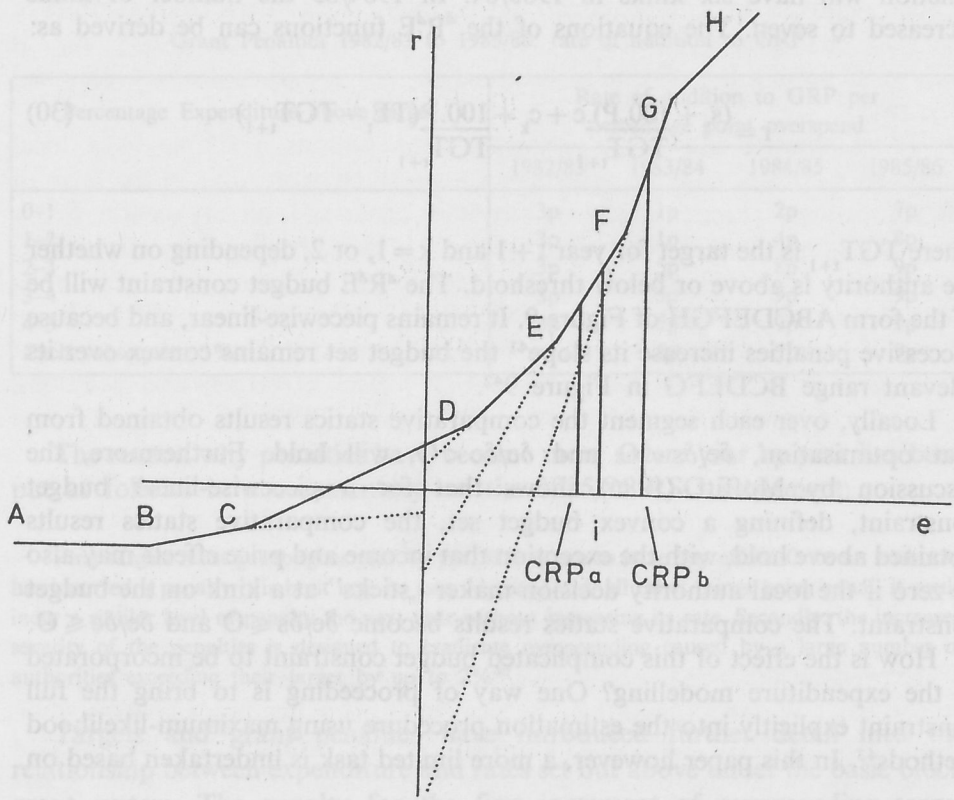

Fig. 9. RE curve as modified by target penalties

the use of approximations to express the budget constraint. The method used, similar to that of Barnett (1986), is now discussed. Recall that Figure 9 shows the $^{4}R^{4}E$ curve augmented by the full effects of the target penalties. Instead of one intercept and one slope of the discussion of the utility maximisation model above, there are six slopes and six intercepts for the function. The approach to estimation taken here is to approximate to the $^{4}R^{4}E$ curve by using just one slope term and one intercept term.

The intercept term is an expression of the height of the budget constraint. If there is just one linear relationship it does not matter where on the horizontal axis this height is measured, so long as it is the same for each authority. The natural ordinate for measuring the intercept is along e=O. However, as a method of approximating to the height of the budget constraint, projecting back to the intercept at vertical axis is likely to increase error as these

intercepts diverge widely. In comparing the constraints facing different authorities, a measure of the height of the budget constraint taken nearer to the authorities actual expenditure is likely to reduce the divergence. In his model, Barnett (1986) measures the height of the budget constraint at i, where i is the rate of expenditure increase that would preserve in real terms the expenditure plans of the last period[44]. Table 8 sets out the average values for e actually budgeted for by metropolitan Districts and non-metropolitan Counties (the authorities studied in the empirical work) and the values for CRPb and CRPa selected for this study. Essentially the values for expenditure change CRPb and CRPa have been selected on an a d h o c basis to be in the neighbourhood of average actual expenditure change of the authorities considered. The measure used in this study is CRPb (Change in Rate Poundage b) of Figure 9, which can be seen from Table 8 to be close to the average observed values for the authorities considered[45]. The s l o p e of the budget constraint is measured by comparing the height of the $^{d}R^{d}E$ curve over an interval around the actual e budgeted by authorities. The approximation to the height of the constraint measured at CRPb is called f i s c a l p r e s s u r e n this study. Secondly, the approximation to the slope of the $^{d}R^{d}E$ curve between CRPa and CRPb (CRPb–CRPa) is called m a r g i n a l f i s c a l p r e s s u r e.

Table 8

Actual expenditure increases (%) and expenditure increases used in fiscal pressure measures

Year	Average Expenditure Increase			
	metropolitan districts	non-metropolitan counties	CRPb	CRPa
1982/83	5.98	8.59	9	5
1983/84	3.81	4.49	5	3
1984/85	2.42	3.02	3	0

The a p r i o r i expectations, based upon the discussion of local authority optimisation above are that local authority expenditure increases will vary inversely with both average and marginal fiscal pressure. These fiscal pressure measures are clearly an imperfect expression of the complicated budget constraint that confronts local authorities. However, as approximations, it is

[44] B a r n e t t, *Local Authority Expenditure...*

[45] In some regressions CRPa is used.

expected that they will show the hypothesised negative relation to local authority expenditure increases. The main barrier to confidence in the applicability of the comparative statics rasults derived above would be the non-convexity shown by the $^4R^4E$ functions where the constraint on non-negative block grant operates[46]. However, none of the authorities in the observation sets used (non-metropolitan Counties and metropolitan Districts) spent in this region of the budget constraint. As mentioned above, a non-convexity problem d o e s exist for the 12 metropolitan Districts and 9 non-metropolitan Counties spending above GRE and more than five per cent above target in 1982/83, which may impair the performance of the model in this year.

Other variables are likely to influence the local authority decision-maker's utility function. Three of these variables are discussed below – namely[47] local politics (2) targets, and (3) GREs.

IX. OTHER EXPLANATORY VARIABLES IN THE EXPENDITURE MODEL

Local Politics

Debate over the years 1982/83 to 1984/85 would lead to an expectation that local politics was a major influence on expenditure and expenditure changes during these years. Although there is a large literature on the measurement of political control, it has included a number of contributions which have been sceptical about the relative importance of local politics – especially in the less politicised shire Counties. To the some extent this body of opinion arose from the fact that a number of studies which found significant effects for urban authorities were unable to find such effects for the non-metropolitan (1) or their predecessor administrative Counties (Karran, 1982). However, there are weaknesses in both works cited.

In Ashford, Berne and Schramm (1976), as has been noted above, the model specifies that marginal rate of grant was zero for all authorities, thus ignoring the effects of resources element. Karran uses the level of grant to explain expenditure, but does not take account of the effect of expenditure in determining grant. Newton and Sharpe (1984) show that a simple cross-tabulation of published financial data by party control reveals fairly

[46] I. e. segment GH in Figure 9.

[47] Ashford, Berne, Schramm, *op. cit.*

obvious differences between administrative Counties under different party control.

Another feature of this literature has been the debate about the best way to measure political variables. In a number of studies there has been no noticeable improvement derived from using size of majority as opposed to dummy (zero-one) variables to register the fact of which party has control (if any). In the model estimated here, zero-one variables are used and three types of political control are distinguished: Labour control, Conservative control, and No Overall Control (including Liberal control). The results from the use of these variables is of interest because the consensus among commentators was that large differences arose during these years between local parties of the same colour in different areas.

GRE changes

From Equations 5, 6 and 7 above it can be seen that the Government's assessment of the expenditure needs of each local authority (GRE) is a major determinant of the grant received for a given level of spending as $BG/GRE = s_1$. This GRE effect is already embodied in the fiscal pressure variables. Nevertheless, there is another potential expenditure influence exercised by GRE and GRE changes, in that GRE may be regarded as a normative guideline to local authorities on spending. Such an effect was emphasised by critics of the Government's intention to publish GREs at the time of the introduction of the block grant system. It was argued that the central assessment of each authority's needs would override or be used as a substitute for local judgment on expenditure levels both in total and for individual services.

The measure used in this study is the change in GRE compared to the previous budget of the authority. It is expected that the effect of an increase in GRE will be positive.

Target/Expenditure Guidance

Target change compared to previous budget is the other major determinant of the fiscal pressure experienced by different local authorities, and thus its potential expenditure effect is embodied in the fiscal pressure variables. However, it is conceivable that target exerts an additional expenditure effect because of the step changes it introduces into the local authority budget constraint and because of the prominence it receives in budgetary discussion. If a positive and significant effect is found for the target increase variable this

suggests that authorities are budgeting closer to target than would be expected from consideration of the fiscal pressure and other variables alone. In theory such a finding is compatible with two separate types of behaviour – strategic budgeting (i. e. attempting to ensure that next year's target is based on a large budget) or treating target as a normative guideline on spending which the authority has attempted to follow. However only the former seems a credible interpretation given the predominance of authorities budgeting over target compared to those below target.

X. EMPIRICAL ANALYSIS

The empirical analysis of local authority behaviour was undertaken on annual changes in local authorities' total expenditure in 1982/83, 1983/84 and 1984/85.

Specifically, the dependent variable, e, was the year-on-year change in an authority's total expenditure. Three sets of the dependent variable were collected for the three years studied, as follows:

For the 1982/83 regressions: the percentage change in the local authority's total expenditure between 1981/82 budgets and 1982/83 budgets.

For the 1983/84 regressions: the percentage change in the local authority's total expenditure between 1982/83 budgets and 1983/84 budgets.

For the 1984/85 regressions: the percentage change in the local authority's total expenditure between 1983/84 budgets and 1984/85 budgets.

Seven explanatory variables were used in the estimation of expenditure change functions to represent the factors argued to be of importance above. They are listed below, and their predicted signs are given in parentheses. For each of the three years, three fiscal pressure variables were used as follows:

CRPb – the change in rate poundage for a 9% cash increase in total expenditure in 1982/83, and for a 5% cash increase in 1983/84, and for a 3% cash increase in 1984/85 (given zero use of balances and zero provision for clawback).

CRPa – the change in rate poundage for a 5% cash increase in total expenditure in 1982/83, and for a 3% cash increase in 1983/84, and for a 0% cash increase in 1984/85 (given zero use of balances and zero provision for clawback).

CRPb-CRPa (marginal fiscal pressure) – the increase in the change in rate poundage for the increase in the change in expenditure used to define the CRPs (see above).

Divergences between target and budget and GRE and budget were measured as follows:

PCT – the percentage change in target compared to previous budget (+).

PCG – the percentage change in GRE compared to previous budget (+).

Lastly, political dummies were used:

CON – equal to 1 when majority of seats held by Conservative party.

NOC – equal to 1 when no party holding a majority of seats (or where majority of seats held by Liberal party).

The model can be summarised as follows: the utility function of the local decisionmaker is indexed by political control (CON, NOC) and by the target variable PTC and the GRE variable PCG to give:

$$U(e,\gamma: \text{CON, NOC, PCT, PCG}) \tag{31}$$

The basic model estimated is:

$$e = f(\text{CRPa, CRPb-CRPa, PCG, PCT, CON, NOC}) \tag{32}$$

with $\delta CB/\delta CRPa \leqslant 0$, $\delta CB/\delta(CRPb\text{-}CRPa) \leqslant 0$, $\delta CB/\delta PCG > 0$, $\delta CB/\delta PCT > 0$, and with the shift dummies CON and NOC exerting a negative effect on e. Linearity is assumed and the coefficients of the variables are estimated by ordinary leaset squares.

The model is applied to metropolitan Districts and non-metropolitan Counties. The results indicated that all seven variables had some role as determinants of changes in local authorities' expenditure. However, consideration of these results led to the estimatin of expenditure functions for local authorities disaggregated into three groups by political control.

Figure 10 shows schematically the sets of regressions which are presented below.

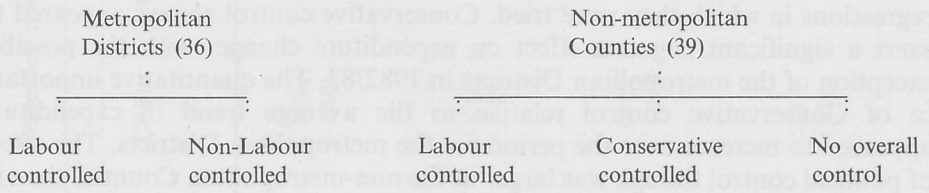

Fig. 10. Regression results – summary of sets of regressions

XI. OVERALL REGRESSIONS

The two sets of overall regressions results are given in Table 9 for the metropolitan Districts and Table 10 for the non-metropolitan Counties. In each case five regressions per class are shown for each year. The approach used

was to try to identify first the contribution of fiscal pressure variables alone (regressions 1 and 2), and then to compare this with the total effect of the GRE and Target variables (regression 3). Political variables are added in order to assess their importance (regressions 4 and 5). Regression number 4 excluded the marginal fiscal pressure variable and regression number 5 excluded the Target variable because they were usually highly correlated. High correlations also occurred between some other combinations of variables, and this signalled a potential difficulty in separating the independent effect of all the variables.

Because a priori expectations have been established for the signs of the coefficients, one-tailed tests are used in considering the results. One of the tests [c] is unusually high in size, set at the 0.25 level. It is included as being of some interest given the difficulty of working on cross-section data on changes.

Looking at the results, generally the level of explanation in the regressions is reasonable given that the dependent variable measures such short-term changes in expenditure. When the maximum number of five explanatory variables was included (i. e. regressions 4 or 5) the coefficient of multiple determination ranged between .364 and .673 for the metropolitan Districts, and between .478 and .601 for the non-metropolitan Counties.

The level of fiscal pressure appeared to be a significant and important determinant in all cases except for the metropolitan Districts in 1983/84 (and in this case marginal fiscal pressure appeared to be important) and for the Counties in 1982/83. In addition marginal fiscal pressure often had a significantly negative effect on expenditure changes in the regressions. For the non-metropolitan Counties, the zero-order relation between the level of fiscal pressure and expenditure change as measured by regression 1, has increased strongly from 1982/83 ($R^2 = .005$) to 1984/85 ($R^2 = .467$). This may be an example of a long period of taking up slack before changes in the financial environment began to take effect.

Political control variables were statistically significant in most of the six regressions in which they were tried. Conservative control always appeared to exert a significant negative effect on expenditure change, with the possible exception of the metropolitan Districts in 1982/83. The quantitative importance of Conservative control relative to the average trend in expenditure appeared to increase over the period for the metropolitan Districts. The effect of political control though was larger in the non-metropolitan Counties than in the metropolitan Districts throughout the period – it amounted to over a four per cent change in expenditure compared to Labour control in the readjustment phase of 1982/83. The explanation for this is probably the unusually large proportion of authorities that had had changes in political control and were undertaking expenditure readjustments[48].

[48] The theory underlying this is given in Gibson, *Why Block Grant...* see also G. W. Jones, J. D. Steward, *The Layfield Analysis Applied to Central-Local Relations under the Conservative Government*, „Local Government Studies", May-June 1982, p. 52.

Table 9

Regression results, annual changes in expenditure – metropolitan districts

Year/ Regression Number	Const	CRPb	CRPa	CRPb -CRPa	PCG	PCT	CON	NOC	R^2
	<----------	Explanatory Variables	----------						>
82/83:									
1.	10.74	−.16 [a] (−4.10)							.331
2.	11.33		−.16 [a] (−3.62)	—.23 [b] (−1.36)					.334
3.	5.96				.22 [a] (2.06)	−.17 (−.45)			.215
4.	10.55	−.15 [a] (−2.43)			.04 (.33)	.01 (.03)	−1.39 [c] (−.89)	1.09 (.58)	.364
5.	11.57		−.14 [a] (−2.22)	−.26 [b] (−1.42)	.05 (.56)		−1.66[c] (−1.05)	0.96 (.51)	.372
83/84:									
1.	3.86	−.04 [c] (−1.22)							.042
2.	5.19		.02 (.47)	−.18 [a] (−2.53)					.164
3.	2.21				−.13* (−3.29)	.68 [a] (4.77)			.408
4.	2.47	.01 (.41)			−.10* (−2.01)	.62 [a] (3.33)	−.71 [c] (−1.07)	−.90 [c] (−1.16)	.449
5.	6.94		.01 (.31)	−.37 [a] (−3.67)	−.13* (−2.45)		−.77 [c] (−1.17)	−1.18 [b] (−1.62)	.461

Table 9 (contd)

Year/ Regression Number	Const	<---------- Explanatory Variables ----------> CRPb	CRPa	CRPb -CRPa	PCG	PCT	CON	NOC	R^2
84/85:									
1.	3.66	−.08 [a] (6.37)							.544
2.	3.93		−.06 [a] (−3.12)	−.10 [a] (6.43)					.594
3.	2.41				.07 [a] (2.33)	.18 [b] (1.53)			.574
4.	3.32	−.05 [a] (−2.65)			.07 [a] (2.19)	.07 (.56)	−.50 [c] (−1.29)	−.15 (−.36)	.673
5.	3.46		−.05 [a] (−2.82)	−.05 [b] (−1.83)	.08 [a] (2.57)		−.49 [c] (−1.27)	−.21 (−.51)	.670

Notes: [a], [b] and [c] denote regression coefficients significantly different from zero in a one-tailed test at the .05, .10 and .25 levels respectively. * denotes „wrong" sign, significantly different from zero in a two-tailed test at the .10 level. n=36.

Table 10

Regression results, annual changes in expenditure
non-metropolitan counties

Year/ Regression Number	Const	CRPb	CRPa	CRPb -CRPa	PCG	PCT	CON	NOC	R^2
	<---------- Explanatory Variables ---------->								
1982/83:									
1.	8.82	−.01 (−.45)							.005
2.	8.70		.00 (.03)	−.01 (−.46)					.006
3.	5.09				.28 [a] (1.91)	.79 [a] (3.32)			.276
4.	7.87	−.02 [c] (−1.11)			.40 [a] (2.74)	.55 [b] (1.83)	−4.61 [a] (−3.56)	−1.30 [c] (−.82)	.523
5.	7.31		.03 (.32)	−.02 [c] (−1.10)	.55 [a] (3.30)		−4.37 [a] (−3.11)	−.46 [c] (−.99)	.478
1983/84:									
1.	5.80	−.11 [a] (−4.14)							.317
2.	6.16		−.08 [a] (−3.22)	−.20 [a] (−3.54)					.368
3.	3.54				.13 [c] (1.30)	.16 [c] (.70)			.357
4.	5.28	−.06 [a] (−1.88)			.16 [a] (1.80)	.22 [c] (1.04)	−1.76 [a] (−3.63)	−1.83 [a] (−3.66)	.601
5.	6.60		−.06 [a] (−2.12)	−.16 [b] (−1.46)	.17 [a] (1.92)		−1.77 [a] (−3.56)	−1.86 [a] (−3.67)	.598

Table 10 (contd)

Year/ Regression Number	Const	<---------- Explanatory Variables ----------> CRPb	CRPa	CRPb -CRPa	PCG	PCT	CON	NOC	R^2
1984/85:									
1.	4.02	−.11 [a]							.467
		(−5.69)							
2.	3.99		−.12 [a]	−.11 [a]					.468
3.	2.21		(−3.49)	(−5.55)	.09 [c]	.21 [c]			.372
					(1.12)	(1.09)			
4.	4.06	−.10 [a]			.02	.19 [c]	−0.92 [b]	−.20	.542
		(−2.69)			(.20)	(.86)	(−1.63)	(−.35)	
5.	4.08		−.11 [a]	−.11 [a]	.06 [c]		−.68 [b]	−.01	.531
			(−2.90)	(2.15)	(.77)		(−1.17)	(−.00)	

Notes: [a], [b] and [c] denote regression coefficients significantly different from zero in a one-tailed test at the .05, .10 and .25 levels respectively. n=39.

After changes in political control, the importance of the political control dummy would be expected to be greater than usual. The importance of political control variables is seen as an interesting finding, given past difficulties in discerning such political effects for the non-metropolitan Counties. The effect of the no overall control variable was usually less important and statistically significant – but only in one case did it have the „wrong" sign.

It is important to make a distinction between a coefficient's quantitative size and its statistical significance in relation to the GRE and Target variables. The coefficients on GRE and target were statistically significant throughout the period in the Counties becoming less strongly significant in 1984/85. For the metropolitan Districts Target appeared to be highly significant in 1983/84 and less strongly significant in 1984/85 whereas GRE became highly significant in 1984/85. However the quantitative effect of each one per cent change in GRE was never large in relation to the underlying upward trend in nominal expenditure – represented here by the size of the constant. In fact despite remaining statistically significant in the Counties the coefficient on PCG (the percentage change in GRE compared to previous budget) became smaller arithmetically than the coefficient on the (one penny) change in fiscal pressure by 1984/85, whereas it had been larger in 1982/83 and 1983/84.

In the Districts the statistically significant coefficient on GRE in 1984/85 represented a small quantitative guideline reaction of under one tenth of each percentage change in GRE. One important anomalous effect is the strongly established wrong signs on PCG for metropolitan Districts in 1983/84.

Overall, apart from this last finding, the results follow the a priori expectations from earlier discussion and it is suggested that the level of explanation is satisfactory for cross-section estimation on expenditure changes. The lowest levels of explanation are for 1983/84, and the violation of the convexity assumption, mentioned above, that occurred for just over one quarter of the observations for this year may have some responsibility for this.

In the next section it is investigated whether there were differences in the structural reaction of groups of authorities under different political control. The a priori hypothesis postulated was that Labour authorities would be less influenced by any guideline effect via the GRE or Target variables than non-Labour authorities.

XII. AUTHORITIES DISAGGREGATED BY POLITICAL CONTROL

The five sets of disaggregated regressions are presented in Tables 11 to 15. Metropolitan Districts were split into two groups: Labour controlled and non-Labour controlled for each of the three years studied. In non-Metropolitan Counties, the relatively numerous hung authorities made it possible to split the data into three groups: Labour controlled, Conservative controlled

and authorities with no overall control. Each of these tables is discussed briefly before an overall summary of these regressions is made.

Table 11

Regression results, annual changes in expenditure
labour controlled metropolitan districts

Year/ Regression Number	Constant	<------Explanatory Variables---------> CRPb	CRPa	CRPb -CRPa	PCG	PCT	R^2
1982/83:							
1.	11.35	−.18 [a] (−3.65)					.348
2.	12.72		−.17 [a] (−3.37)	−.31 [b] (−1.42)			.358
3.	6.08				.25 [b] (1.83)	−.15 (−.31)	.211
4.	10.91	−.17 [a] (−2.22)			.04 (.27)	−.36 (−.08)	.350
5.	12.33		−.15 [b] (−1.87)	−.32 [b] (−1.42)	.06 (.50)		.365
1983/84:							
1.	4.71	−.03 [c] (−.73)					.025
2.	5.25		.02 (.43)	−.13 [b] (−1.47)			.098
3.	2.96				−.10* (−1.94)	.48 [a] (2.56)	.248
4.	2.81	.01 (.16)			−.10* (−1.81)	.50 [a] (2.21)	.249
5.	6.48		.01 (.21)	−.32 [a] (−2.71)	−.13* (−2.21)		.282
1984/85:							
1.	3.63	−.08 [a] (−5.31)					.561
2.	3.90		−.06 [a] (−2.71)	−.10 [a] (−5.03)			.601
3.	2.49				.08 [a] (1.97)	.19 [c] (1.33)	.545
4.	3.48	−.05 [a] (−2.62)			.07 [a] (1.90)	.00 (.01)	.661
5.	3.45		−.06 [a] (−2.69)	−.05 [b] (−1.63)	.07 [b] (1.89)		.661

Notes: n=27 (1982/83); n=23 (1983/84); n=24 (1984/85) [a], [b] and [c] denote regression coefficients significantly different from zero in a one-tailed test at the .05, .10 and .25 levels respectively. * denotes 'wrong' sign, significantly different from zero in a two-tailed test at the .10 level.

Table 11 gives the results for Labour controlled metropolitan District councils. These authorities appeared to react mainly to fiscal pressure. There was very little sign of GRE or Target having a guideline effect until GRE in 1984/85. In fact the strongest association with GRE was a negative one, as found in the aggregate regressions above in 1983/84, caused by the fact that those Districts spending furthest above GRE increased their spending most.

In 1983/84 there was a very significant positive reaction to target, but this may have been merely a proxy measure of the effect via marginal fiscal pressure which was also highly significant. Despite this, the level of explanation achieved in 1983/84 was low and relied partly on the perverse association between GRE and spending. The degree of explanation was very high in 1984/85, and satisfactory in 1982/83 and was mostly due to the level of fiscal pressure.

Table 12

Regression results, annual changes in expenditure - non labour controlled metropolitan districts

	<-------Explanatory Variables --------->						
Year/ Regression Number	Constant	CRPb	CRPa	CRPb -CRPa	PCG	PCT	R^2
1982/83:							
1.	8.78	−.09 [c]					.104
		(.90)					
2.	8.95		−.07	−.11			.105
			(−.65)	(−.36)			
3.	6.32				.12	−.09	.123
					(.69)	(−.16)	
4.	7.41	−.04			.08	−.04	.137
		(−.29)			(.32)	(−.06)	
5.	6.97		−.05	.01	.08		.140
			(−.35)	(.02)	(.45)		
1983/84:							
1.	3.91	−.07 [c]					.131
		(−1.29)					
2.	5.33		.01	−.31 [a]			.516
			(.11)	(−3.26)			
3.	1.66				−.09	.74 [a]	.537
					(−.88)	(2.49)	
4.	1.48	.01			−.09	.75 [a]	.538
		(.18)			(−.82)	(2.30)	
5.	6.85		−.00	−.47 [a]	−.11		.566
			(−.00)	(−2.56)	(−1.02)		

Table 12 (contd)

Year/ Regression Number	Constant	CRPb	CRPa	CRPb -CRPa	PCG	PCT	R^2
		<-------Explanatory Variables--------->					
1984/85:							
1.	4.04	−.13 [a]					.337
		(−2.25)					
2.	4.33		−.09 [b]	−.15 [a]			.454
			(−1.46)	(−2.65)			
3.	2.42				.08 [c]	.10	.549
					(1.18)	(.38)	
4.	3.01	−.08 [c]			.01	.28 [c]	.598
		(−.99)			(.12)	(.85)	
5.	2.81		−.04	−.03	.10 [b]		.564
			(−.58)	(−.28)	(1.41)		

Notes: n=9 (1982/83); n=13 (1983/84); n=12 (1984/85) [a], [b] and [c] denote regression coefficients significantly different from zero in a one-tailed test at the .05, .10 and .25 levels respectively.

Table 12 gives the results for non-Labour controlled metropolitan District councils. The level of explanation for these authorities was low in 1982/83. In 1983/84 either marginal fiscal pressure or Target was the key variable and explained over fifty per cent of variation. In regressions including both variables (not shown here), marginal fiscal pressure appeared to be the more important variable. In 1984/85 all the variables appeared to have some importance – certainly GRE was statistically significant for the first time.

Table 13

Regression results, annual changes in expenditure – labour controlled non-metropolitan counties

Year/ Regression Number	Constant	CRPb	CRPa	CRPb -CRPa	PCG	PCT	R^2
		<------Explanatory Variables--------->					
1982/83:							
1.	10.78	−.02					.038
		(−.56)					
2.	11.79		−.06	−.02			.043

Table 13 (contd)

Year/ Regression Number	Constant	<------Explanatory Variables---------> CRPb	CRPa	CRPb -CRPa	PCG	PCT	R^2
			(−.24)	(−.55)			
3.	5.22				.49 [c]	1.21 [c]	.547
					(1.09)	(1.06)	
4.	6.10	−.02 [c]			.55 [c]	1.11 [c]	.601
		(−.91)			(1.18)	(.96)	
5.	3.93		.11	−.02 [c]	.94 [a]		.571
			(.55)	(−.86)	(2.72)		
1983/84:							
1.	6.94	−.15 [a]					.799
		(−5.63)					
2.	8.19		−.12 [a]	−.29 [a]			.864
			(−3.92)	(−3.59)			
3.	4.06				.14	.49 [c]	.666
					(.41)	(.78)	
4.	5.91	−.11 [a]			.02	.31	.877
		(−3.21)			(.10)	(.74)	
5.	7.20		−.11 [a]	−.19 [c]	.10		.870
			(−3.27)	(−.91)	(.51)		
1984/85:							
1.	4.55	−.14 [a]					.700
		(−4.32)					
2.	4.32		−.15 [a]	−.13 [a]			.708
			(−3.70)	(−3.31)			
3.	2.14				.16	.08	.240
					(.69)	(.15)	
4.	4.59	−.15 [a]			.04	−.20	.716
		(−3.17)			(.26)	(−.54)	
5.	4.11		−.14 [a]	−.12 [b]	.02		.709
			(−3.12)	(−1.54)	(.15)		

Notes: n = 10 [a], [b] and [c] denote regression coefficients significantly different from zero in a one-tailed test at the .05, .10 and .25 levels respectively.

Table 13 gives the results for Labour controlled non-metropolitan Counties. Average fiscal pressure seemed to be the dominant variable in 1983/84 and 1984/85 but GRE and Target jointly had an important influence both statistically and quantitatively in 1982/83 only. Levels of explanation were very high throughout.

Table 14

Regression results, annual changes in expenditure – conservative controlled non-metropolitan counties

Year/ Regression Number	Constant	<-----Explanatory Variables---------> CRPb	CRPa	CRPb -CRPa	PCG	PCT	R^2
1982/83:							
1.	11.79	−.26 [a] (−4.64)					.531
2.	11.84		−.22 [a] (−2.08)	−.30 [a] (−2.65)			.535
3.	1.34				.68 [a] (3.51)	.16 (.67)	.421
4.	9.81	−.22 [a] (−2.06)			.15 (.46)	.04 (.18)	.537
5.	10.42		−.22 [a] (−2.02)	−.23 (−.61)	.11 (.16)		.536
1983/84:							
1.	5.21	−.06 [c] (−.85)					.037
2.	6.06		−.05 [c] (−.81)	−.24 [b] (−1.48)			.113
3.	3.11				.20 [b] (1.75)	.13 (.30)	.209
4.	3.32	−.02 (−.33)			.19 [b] (1.52)	.14 (.33)	.214
5.	4.15		−.02 (−.34)	−.08 (−.41)	.19 [b] (1.48)		.214
1984/85:							
1.	4.00	−.15 [a] (−2.59)					.261
2.	5.21		−.04 [c] (−.94)	−.32 [a] (−5.64)			.642
3.	0.24				.09 [c] (1.31)	.90 [a] (4.17)	.682
4.	0.35	−.01 (−.16)			.08 [c] (1.11)	.89 [a] (3.81)	.683
5.	3.96		−.01 (.12)	−.25 [a] (−3.78)	.12 [b] (1.71)		.694

Notes: n=21 [a], [b] and [c] denote regression coefficients significantly different from zero in a one-tailed test at the .05, .10 and .25 levels respectively.

Table 14 gives the results for Conservative controlled non-metropolitan Counties. For these authorities the fiscal pressure variables were the most important in 1982/83, but in 1983/84 GRE was significant and its coefficient quite large. In 1984/85 marginal fiscal pressure, target and GRE all appeared important.

Table 15

Regression results, annual changes in expenditure – non-metropolitan counties under no overall control

Year/ Regression Number	Constant	<-----Explanatory Variables---------> CRPb	CRPa	CRPb -CRPa	PCG	PCT	R^2
1982/83:							
1.	12.68	−.08 (−.53)					.053
2.	10.93		−.17 (−.55)	.22 (.25)			.067
3.	9.03				−.30 [c] (1.30)	2.56 [a] (4.02)	.778
4.	5.74	.10 (.50)			−.13 (−.34)	2.50 [a] (3.40)	.792
5.	−21.04		.13 (.43)	2.10 [b] (1.65)	1.29 [b] (1.83)		.492
1983/84:							
1.	5.65	−.15 [b] (−1.58)					.294
2.	6.30		.12 [b] (1.72)	−.43 [a] (−6.03)			.879
3.	2.44				.14 [c] (.76)	.37 [c] (.87)	.805
4.	0.16	.12 (1.42)			.08 (.45)	.77 [c] (1.61)	.871
5.	5.71		.11 [c] (1.47)	−.36 [c] (−1.56)	.05 (.29)		.882
1984/85:							
1.	4.25	−.09 [c] (−1.23)					.202
2.	3.95		−.16 [b] (−1.54)	−.08 [c] (−1.06)			.327
3.	3.77				.60 [a] (2.86)	−1.88* (−2.59)	.631
4.	2.89	.08 (.47)			.77 [b] (1.76)	−2.21 (−1.93)	.664
5.	−2.02		−.01 (−.05)	.32 (1.49)	.45 [b] (1.92)		.650

Notes: n=7 [a], [b] and [c] denote regression coefficients significantly different from zero in a one-tailed test at the .05, .10 and .25 levels respectively. * denotes 'wrong' sign, significantly different from zero in a two-tailed test at the .10 level.

Lastly Table 15 gives the results for non-metropolitan Counties under no overall control. These authorities were markedly different from the other groups in 1982/83 with Target being the key variable. As this group usually

budgeted above Target it can be inferred that there was a strong „strategic budgeting"[49] effect exhibited. However, in 1983/84 this effect was not present, and by 1984/85 it was replaced by the largest reaction to GRE seen in any of the sets of regressions. This was accompanied by some fairly strongly established wrong signs for the target variable.

In general non-metropolitan Counties under no overall control reacted most strongly to target and GRE variables, and reacted in the opposite way to a priori expectation for Target in 1984/85. Only in 1983/84 did there appear to be a possible reaction to fiscal pressure rather than to GRE or Target.

Overall, there was more reaction to GRE amongst non-Labour groups of authorities and by 1984/85 it had seemed to become a more important factor compared to Target – perhaps the increasing severity of grant penalties had by then made strategic budgeting too expensive or perhaps authorities were aware by then that the target methodology was less rewarding to such behaviour. Except in the case of the „hung" Counties fiscal pressure was again usually a consistently important and statistically significant variable – the exceptions being in 1982/83 in two of the other four groups – Labour controlled non-Metropolitan Counties and non-Labour controlled Metropolitan Districts.

XIII. CONCLUDING COMMENTS

This paper has discussed the main features of local government current expenditure in recent years. Education expenditure represents the largest share but has been falling over time whilst social security spending has risen sharply in the same period. The most dramatic real cuts over the period have been in housing in 1981/82. In general a tendency for planned cuts not to be realised in outcomes has been noted and some reasons for this have been suggested.

The primary purpose of the paper has been to specify and estimate a model of local authority expenditure change. Existing models of expenditure change have been surveyed and elements of these models, particularly that of Barnett (1986) have been used to specify the model tested in the later part of the paper.

An extensive analysis of various expressions of the budget constraint confronting local authority decision-makers has been carried out. This has been combined with a simple utility maximisation model concerned with choice over expenditure-increases seen as „goods" and rate-increases seen as „bads". Simple approximations, termed fiscal pressure and marginal fiscal pressure, have been used to represent the complicated local authority budget constraint and a model of budget decision-making, augmented by consideration of politics and GRE and Target guidelines has been estimated.

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[49] The practice of budgeting over target in the hope of generating a favourable target for the next year which would be expected to be based on the previous year's target.

The empirical results presented here have shown the importance of fiscal pressure, GRE, Target, and political control. Local authorities were found to respond to increases in both the level and the rate of increase of fiscal pressure with respect to expenditure increase, by either decreasing their expenditure, or decreasing the rate at which they increased it year on year. Year-on-year expenditure increase was also generally negatively influenced by Conservative political control, and, in a less well established way, by lack of overal control. GRE and Target had some limited role in influencing the expenditure of some groups of authorities, but usually a smaller role than fiscal pressure.

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ZMIANY W BIEŻĄCYCH WYDATKACH BRYTYJSKICH LOKALNYCH WŁADZ A DOTACJE

Przedmiotem opracowania są główne cechy bieżących wydatków budżetów lokalnych w Wielkiej Brytanii w ostatnich latach. Wydatki władz lokalnych mają duże znaczenie gospodarcze. W roku finansowym 1985/1986 stanowiły one ponad 1/4 wydatków publicznych. Władze lokalne zatrudniają 3 mln osób, czyli 14% siły roboczej; 77% wydatków budżetów lokalnych to wydatki bieżące, 14% stanowią wydatki inwestycyjne, pozostałość to wydatki wiążące się z zadłużeniem.

W budżetach lokalnych największe są wydatki na oświatę (50,98% wydatków ogółem w roku finansowym 1980/1981, 44,25% w roku finansowym 1986/1987), choć ostatnio ich udział procentowy w wydatkach ogółem nieco zmalał. Znacznie wzrosły natomiast w ostatnim okresie wydatki na opiekę i zabezpieczenie społeczne (1,94% w roku 1980/1981, 10,50% w roku 1986/1987).

Głównymi źródłami finansowania wydatków lokalnych są podatki i opłaty oraz dotacje. Całość dotacji określana jest mianem zagregowanej dotacji skarbu państwa. W ramach owej zagregowanej dotacji największą rolę odgrywa dotacja globalna tzw. *Block Grant*, która stanowi ponad 70% wszystkich dotacji.

Autorzy posługując się licznymi wzorami i wykresami przedstawiają modele wydatków lokalnych i analizują czynniki wpływające na rozmiary tych wydatków. Prezentują m.in. mechanizmy funkcjonowania tzw. *Block Grants*, charakteryzując ich wpływ na wydatki budżetów lokalnych. Autorzy wskazują bariery i ograniczenia, z jakimi mają do czynienia podmioty podejmujące decyzje budżetowe na szczeblu lokalnym.

Największy wpływ na wydatki lokalne mają zdaniem Autorów:

– lokalne podatki (czynnik fiskalny), wiążące się z systemem dotowania;

– dokonywana przez rząd ocena potrzeb w zakresie wydatków lokalnych;

– tzw. cele wydatkowe (*expenditure targets*) ustalane dla jednostek lokalnych również przez rząd na podstawie przeszłych wydatków oraz

– kontrola polityczna wiążąca się ze sprawowaniem władzy przez Partię Konserwatywną.