TERRITORIAL PUBLIC EXPENDITURE IN THE UNITED KINGDOM

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Although the devolution plans of the 1970s were abandoned, those debates had far-reaching consequences for the determination of relative public expenditure levels in the United Kingdom. The Barnett formula (10:5:85) of 1978 provided that increases in public expenditure in Scotland and in Wales for specific services within the territorial blocks would be determined according to the formula consequences of changes in equivalent English expenditure. A parallel formula allocated 2.75 per cent of the change in equivalent expenditure in Great Britain to Northern Ireland. The essential distinction is between base expenditure (whose current levels are carried forward) and incremental expenditure (which is determined by formula). The predicted convergence of block expenditure relatives on the UK per capita average was frustrated by formula bypass, and in Scotland by relative population decline. The background to the 1992 recalibration of the Barnett formula (10.66:6.02:100.00 and Northern Ireland 2.87 per cent) is analysed. Territorial block expenditure is set within the structure of territorial public expenditure aggregates, and evidence is assembled on identifiable public expenditure relatives between countries and by English region.

I INTRODUCTION

Although the devolution debates of the mid-1970s did not lead to the establishment of Scottish and Welsh assemblies, the territorial departments emerged from that episode with a stronger governmental role and more extensive financial discretion (Heald 1980a,b). The Public Expenditure Survey (PES), the process through which UK government decides upon public expenditure levels and priorities, was restructured in ways which more clearly and more publicly specified the expenditure responsibilities of territorial departments.

With a view to regularizing the financial relationship between the UK Exchequer and the proposed Scottish Assembly, the Labour government in 1978 established a formula which linked *changes* in 'Scottish block expenditure' to *changes*

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in 'public expenditure in England on those services within the Scottish block' (with 1979–80 as the effective starting year).[1] In 1980, the Conservative government implemented a parallel arrangement for Wales (with 1981–82 as the effective starting year). It is useful to think of these blocks as relating to 'domestic public services' within, respectively, Scotland and Wales. This formula has become known to academics – but not within government – as the Barnett formula, after Joel Barnett, the Chief Secretary to the Treasury in the 1974–79 Labour government (Heald 1980b; Treasury 1989b; Thain and Wright 1991).

Before its recalibration during the 1992 PES (Treasury 1992b, para. 2.95), the Barnett formula allocated increments/decrements in public expenditure to Scotland, Wales and England in the ratio 10:5:85, the rounded shares of GB population in 1976. If there was an extra £85 on expenditure on 'English services equivalent to those in the Scottish block', the Scottish block automatically received an extra £10. Conversely, an £85 reduction in English expenditure on services equivalent to those in the Scottish block automatically led to a £10 reduction in the block. A similar arrangement applied to Wales, whereby an £85 increase in England on services equivalent to those in the Welsh block produced an extra £5 for that block. It should be noted that the Barnett formula is expressed in this way because the exact coverage of services within the Scottish block is not the same as that within the Welsh block: there are thus two distinct sets of 'English equivalent expenditure'.[2] Although the Scottish and Welsh blocks are published information, these English equivalents have *never* been published. The Northern Ireland formula, established in 1979, was essentially 'son-of-Barnett', with the Northern Ireland block receiving an extra £2.75 when expenditure in Great Britain on services equivalent to those in the Northern Ireland block increased by £100 (1981–82 was the effective starting year) (Likierman 1988; Northern Ireland Department of Finance and Personnel 1990). Within the blocks, the Secretaries of State for Scotland, Wales and Northern Ireland have discretion to switch funds between programmes according to needs and priorities.[3] No Treasury approval is required for such switches in planning years, though the normal rules of virement will apply for the current year once the annual Supply Estimates have been voted by Parliament. The discretion to switch expenditure within the respective blocks is thus an important feature of these territorial financial relationships.

The operation of the system as described above remains unchanged after the 1992 recalibration of the Barnett formula, but the following changes have been made to the proportions of the formula. For Scotland, instead of 10/85ths (11.76 per cent) of changes in equivalent English expenditure, the block now receives an increment of 10.66 per cent (roughly 9/85ths which is equivalent to 10.59 per cent) (Scottish Office 1992c). For Wales, the new figure is 6.02 per cent, revised from 5.88 per cent (Hunt 1992). The new Northern Ireland figure is 2.87 per cent (Northern Ireland Office 1992). These new formula proportions incorporate mid-1992 population estimates.

The purpose of this article is to investigate the effect of the operation of the territorial allocation formulae upon relative public expenditure levels within

the United Kingdom. Section II surveys the territorial structure of public expenditure and presents data on patterns of identifiable expenditure. Section III considers differentials in public expenditure both within the United Kingdom and within England. Section IV explains the operation of the Barnett formula and sets out its predicted effects. Section V reports empirical results relating to the country paths of block expenditure from 1979–80 to 1987–88, showing that these do *not* conform to the theoretical predictions of the paths of relatives under the *strict* application of the Barnett formula (i.e. all changes pass through the formula). Section VI examines the reasons why expenditure convergence has not occurred, namely relative population change and formula bypass. Section VII considers the circumstances in which the Barnett formula was recalibrated in 1992. Finally, section VIII returns to the broader setting of constitutional relationships within the United Kingdom.

II THE STRUCTURE OF TERRITORIAL PUBLIC EXPENDITURE AGGREGATES

Pre-1990 arrangements

An understanding of the structure of public expenditure aggregates is an essential pre-condition for assessing the implications of the Barnett formula. Because the redefinition of the public expenditure planning total in 1990 had significant consequences for the territorial aggregates, it is expositionally convenient to concentrate upon the pre-1990 arrangements, and to delay consideration of recent complicating factors.

In most years since 1979, a Treasury minister has answered a written parliamentary question, providing an analysis of 'identifiable public expenditure' in all four countries of the United Kingdom. (However, the content of the December 1990 written parliamentary answer (Mellor 1990) was reproduced in the *Statistical Supplement to the 1990 Autumn Statement* (Treasury 1991); the practice of publishing in written answers has now been replaced by regular publication in the annual Statistical Supplement to the Autumn Statement. Identifiable public expenditure is that part of public expenditure which can be attributed to one of the four countries on the basis of the Treasury's information systems. These data have never been republished in any of the standard statistical volumes, such as *Regional Trends*, and are never revised. Usually, the written answer covers five years, ending with the latest completed financial year before the date of the written answer. For the latest financial year only, a table analyses the public expenditure planning total by 'territorial area' which is the Treasury's terminology for country. A single column of figures is provided for England. For the three smaller countries, identifiable expenditure is divided between that contained in the territorial programmes managed by the respective Secretaries of State and that outside. Table 1 reproduces the 'territorial analysis' table (1987–88) from the last written answer prior to the redefinition of the planning total (Major 1988).

Figure 1 analyses the various territorial components of the public expenditure

TABLE 1 Territorial analysis of the planning total, 1987-88

	ENGLAND	*SCOTLAND*		
		Territorial Programme	*Other*	*Total*
Defence				
Overseas services				
Agriculture, fisheries, food and forestry	685.4	175.1	51.7	226.8
Trade, industry, energy and employment	3,698.0	229.3	530.4	759.7
Roads and transport	4,820.6	626.1	2.4	628.5
Housing	2,536.5	670.8		670.8
Other environmental services	3,676.2	662.6	11.4	674.0
Law, order and protective services	5,218.5	613.8	16.0	629.8
Education and science + Arts and libraries	17,268.1	2,215.5	311.8	2,527.3
Health and personal social services	19,677.0	2,696.3		2,696.3
Social security	38,660.7		4,561.9	4,561.9
Other public services	1,558.3	116.6	184.4	301.0
Common services	(16.4)		1.7	1.7
Public Expenditure on Programmes	97,782.9	8,006.1	5,671.7	13,677.8
Privatization proceeds				
Planning Total	97,782.9	8,006.1	5,671.7	13,677.8

Note: Arts and Libraries expenditure is subsumed within Education and Science
Source: *Hansard*, 25 Oct, 1988, cols. 120-9

planning total; to repeat for emphasis, the present exposition refers to the pre-1990 situation. The planning total occupies pride of place at the crown of the tree. The first branch distinguishes between *identifiable* expenditure and *non-identified*[4] expenditure (all of defence and overseas aid, and various expenditures on other functions). There is identifiable public expenditure in all four countries. In the cases of Scotland, Wales and Northern Ireland, identifiable expenditure decomposes into public expenditure within the responsibility of the Secretary of State (territorial programme) and other identifiable expenditure. Items within the latter include: regional assistance; expenditure on universities (except in Northern Ireland where it is within the Secretary of State's programme);[5] and social security expenditure (ditto). Public expenditure analyses are generated from operational data and, in the absence of a territorial department for England, there is no natural focal point for such analyses within the planning system.

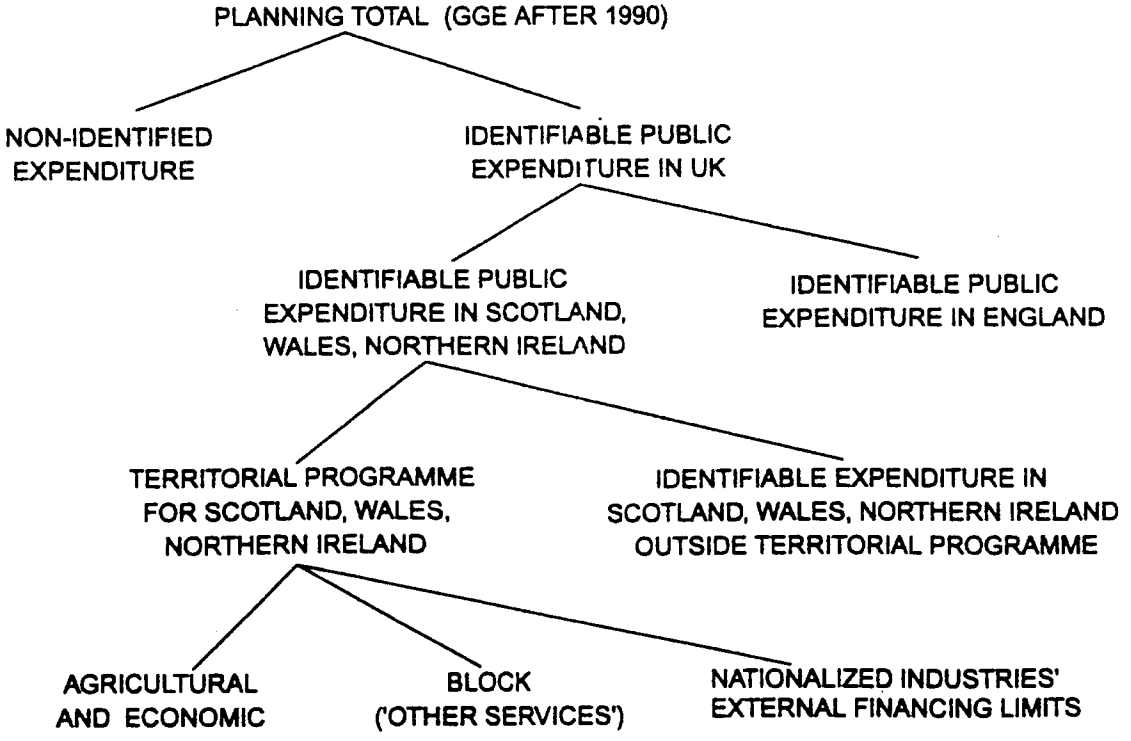
Within the territorial programme, the territorial block is the expenditure aggregate of greatest interest, firstly because variations are controlled by formula, and secondly because the territorial departments possess expenditure-switching discretion within the block.

Outside the block, but within the territorial programme, there may be two other categories of expenditure. 'Agricultural and economic', shorthand for a variety of expenditures on the 'agriculture, fisheries, food and forestry' and 'trade, industry, energy and employment' functions, has to be negotiated bilaterally with the Treasury. The same arrangement applies to the external financing of nationalized industries. Whereas the former appears in all three territorial

£ million

WALES			*NORTHERN IRELAND*			*UNITED KINGDOM*		
Territorial Programme	*Other*	*Total*	*Territorial Programme*	*Other*	*Total*	*Identifiable*	*Non-identified*	*Total*
							18,662.4	18,662.4
							3,611.1	3,611.1
70.9	18.7	89.6	166.8	0.2	167.0	1,168.8	1,239.0	2,407.8
160.5	305.5	466.0	369.2	2.0	371.2	5,294.9	782.9	6,077.8
331.8	72.2	404.0	131.2		131.2	5,984.3	(323.3)	5,661.0
210.9		210.9	237.3		237.3	3,655.5	113.8	3,769.3
315.6	6.3	321.9	232.2		232.2	4,904.3	101.4	5,005.7
	263.2	263.2	569.8	23.2	593.0	6,704.5	1,056.0	7,760.5
915.1	163.7	1,078.8	785.0	1.8	786.8	21,661.0	331.0	21,992.0
1,257.0		1,257.0	812.4		812.4	24,442.7	12.4	24,455.1
	2,500.8	2,500.8	1,453.9	11.5	1,465.4	47,188.8	510.6	47,699.4
38.6	87.6	126.2	48.7	32.6	81.3	2,066.8	551.0	2,617.8
	3.9	3.9		0.6	0.6	(10.2)	1,356.6	1,346.4
3,300.4	3,421.9	6,722.3	4,806.5	71.9	4,878.4	123,061.4	28,004.9	151,066.3
							(5,108.4)	(5,108.4)
3,300.4	3,421.9	6,722.3	4,806.5	71.9	4,878.4	123,061.4	22,896.5	145,957.9

FIGURE 1 *Tree Diagram for Territorial Public Expenditure*



programmes and in each successive issue of the public expenditure plans, there is more diversity with regard to the latter. Whether or not a branch of figure 1 is redundant for a particular country may depend upon the financial year under consideration. For example, prior to 1984–85 all expenditure by the Secretary of State for Scotland was classified as either agricultural and economic or block. Similarly, nationalized industry external financing has never appeared as a category within the Northern Ireland programme, the amounts appearing within agricultural and economic.

Moreover, table 1 shows that expenditure on a particular function may be distributed across more than one branch in figure 1: for example, expenditure on education and science in Scotland contributes to both block (for example, schools) and to other identifiable (for example, universities). Also, the manner of such distribution for a particular programme can vary both with the country under consideration and with the financial year. For example, in Scotland expenditure on law, order and protective services is distributed between block and other identifiable, the bulk going to the former, whereas in Wales expenditure on the same programme contributes only to other identifiable.

At the level of identifiable expenditure, the written parliamentary answer expressed per capita expenditure in each country as a percentage of per capita expenditure in the United Kingdom. The first year of this data series is 1973–74. Table 2 shows the relatives for identifiable public expenditure, adjusted for changes in expenditure definition and classification, and corrected for revised population estimates. Strict comparability only exists within each annual answer (i.e. along the rows). These adjusted figures, though not without some problems, are much superior to the raw data. They show that the 1980s was a period of relative stability.

1990 onwards

The 1990 redefinition of the planning total

In July 1988, the Treasury (1988) unexpectedly announced a redefinition of the planning total, to take effect from the 1990 public expenditure white paper. The most important element of this redefinition was the exclusion of local authority expenditure from the planning total, with a widely drawn 'central government support to local authorities' being substituted for it (Heald 1991). The 'old' planning total consisted of central government's own expenditure; certain expenditure of public corporations; local authorities' current expenditure and capital expenditure (net of receipts); nationalized industries' external financing; privatization proceeds; and the reserve. The 'new' planning total consists of central government's own expenditure; certain expenditure of public corporations; central government support for local authorities (defined to include revenue support grant, non-domestic rate payments, specific grants and credit approvals (capital allocations in Scotland)); privatization proceeds; and the reserve.

There have been three important implications for territorial public expenditure. First, the Barnett formula is applied to a redefined block within the territorial programme which, of necessity, must conform to the Treasury's new

definitions. The exclusion of local authority expenditure suggests that the formula will henceforth apply to a narrower expenditure base. Paradoxically, the numerical effect of the revised definition is far smaller than might have been expected.[6] This is partly due to the treatment of the assigned uniform business rate within 'central government support to local authorities' and also to the accompanying switch of emphasis from 'local authority expenditure excluding debt interest' (which was included in the 'old' planning total) to 'local authority expenditure including debt interest' (which is in part financed by central government support, primarily through the revenue support grant). Whereas it is possible to compare the blocks for the three smaller countries, the absence of published data for English equivalent expenditure on either planning total definition means that it is impossible to judge the consequences of this redefinition for block expenditure relatives. However, there have been higher levels of central government support for local authorities in Scotland and Wales than in England. Block relatives will be affected if the differentials on central government support are higher than those on expenditure.

Second, there has been a significant refocusing of attention away from the planning total towards General Government Expenditure (GGE), the national accounts aggregate, which consists of the expenditure of central and local government, excluding transfers between them. Because the government continues to specify a target path for GGE as part of its macroeconomic strategy, there is a strong element of illusion in the exclusion of local authority expenditure from the planning total. The meaning of the block is fundamentally altered by the substitution of central government support for local authority expenditure; the education programme thus includes only central government expenditure on education.

Third, the redefinition of the planning total has ruptured the existing series of identifiable public expenditure. Up to the 1988 written parliamentary answer (Major 1988), the identifiable expenditure figures analysed the (old) planning total. As from the 1989 written answer (Lamont 1989b), they analyse GGE. No reconciliations between the two data sets have been published. Consequently, whereas the Barnett formula is applied to an implied-but-not-calculated expenditure aggregate defined within the (new) planning total, the identifiable expenditure data now refer to GGE.

After the 1990 redefinition of the planning total, figure 1 still holds as a tree diagram of territorial expenditure. In fact, the structure of aggregates developed with reference to the identifiable analysis of the 'old' planning total has merely been transplanted to GGE. Though *structure* is little changed, *content* has changed substantially.

Table 3 is the GGE counterpart to table 1's territorial analysis of the (old) planning total. Of public expenditure on programmes, 81 per cent can be identified to one of the four countries. However, the focus on GGE means that the identifiable proportion is only 75 per cent, the difference reflecting both the absence of conceptual bases for identification (as with privatization proceeds), and of data (national accounts adjustments are never disaggregated by country).

TABLE 2 Identifiable public expenditure relatives: expenditure per capita as % of UK

	1973–74	*1974–75*	*1975–76*	*1976–77*	*1977–78*	*1978–79*
ENGLAND						
17 January 1979, cols 781–93	96.9	96.6	95.9	95.5	95.3	
26 November 1979, cols 507–20		96.8	96.1	95.5	95.2	95.5
26 March 1981, cols 415–24			96.1	95.7	95.2	95.7
8 December 1981, cols 384–96				95.5	95.2	95.5
1 February 1983, cols 84–96					95.0	95.3
22 February 1985, cols 606–16						
12 March 1986, cols 502–12						
16 December 1986, cols 488–98						
23 October 1987, cols 896–906						
25 October 1988, cols 120–9						
SCOTLAND						
17 January 1979, cols 781–93	118.2	117.1	119.4	120.0	121.0	
26 November 1979, cols 507–20		117.1	119.0	119.6	119.7	118.3
26 March 1981, cols 415–24			119.1	119.9	119.8	117.6
8 December 1981, cols 384–96				120.4	120.2	119.2
1 February 1983, cols 84–96					121.5	120.3
22 February 1985, cols 606–16						
12 March 1986, cols 502–12						
16 December 1986, cols 488–98						
23 October 1987, cols 896–906						
25 October 1988, cols 120–9						
WALES						
17 January 1979, cols 781–93	105.3	102.7	109.2	111.5	114.8	
26 November 1979, cols 507–20		103.7	110.0	112.2	117.0	112.2
26 March 1981, cols 415–24			110.6	112.9	117.3	111.0
8 December 1981, cols 384–96				112.5	115.4	111.8
1 February 1983, cols 84–96					116.3	112.4
22 February 1985, cols 606–16						
12 March 1986, cols 502–12						
16 December 1986, cols 488–98						
23 October 1987, cols 896–906						
25 October 1988, cols 120–9						
NORTHERN IRELAND						
17 January 1979, cols 781–93	120.8	134.6	136.7	143.1	142.5	
26 November 1979, cols 507–20		134.3	136.7	142.6	146.4	151.8
26 March 1981, cols 415–24			135.8	141.7	146.0	149.4
8 December 1981, cols 384–96				144.2	146.9	149.5
1 February 1983, cols 84–96					148.4	151.3
22 February 1985, cols 606–16						
12 March 1986, cols 502–12						
16 December 1986, cols 488–98						
23 October 1987, cols 896–906						
25 October 1988, cols 120–9						

Note: Identifiable public expenditure is defined with relation to the (old) planning total. This is a revised version of table 1 of Heald (1989). Clear guidance from HM Treasury on the necessary adjustments is gratefully acknowledged.
Source: Successive years written answers, *Hansard* (as cited).

identifiable expenditure per capita, 1973–74 to 1987–88

1979–80	*1980–81*	*1981–82*	*1982–83*	*1983–84*	*1984–85*	*1985–86*	*1986–87*	*1987–88*
95.8								
95.6	95.0							
95.4	95.2	95.1						
95.6	95.6	95.6	95.6	95.7				
	95.8	95.8	95.9	95.9	95.9			
		95.5	95.7	95.7	95.9	95.6		
			95.8	95.8	96.1	95.9	95.6	
				95.7	96.0	95.8	95.5	95.4
118.3								
121.3	120.3							
122.1	119.9	123.6						
121.7	121.3	122.5	121.7	120.6				
	122.0	121.8	121.5	120.4	120.4			
		124.2	122.5	121.4	120.7	122.8		
			122.0	120.9	120.2	121.2	122.4	
				122.0	120.7	121.7	122.9	123.8
112.7								
111.4	124.8							
111.7	123.0	111.9						
104.9	106.5	107.1	106.9	109.1				
	105.1	105.8	105.6	107.4	105.0			
		105.4	105.3	107.3	104.4	105.9		
			106.2	108.0	105.5	106.4	108.6	
				108.5	106.0	106.0	109.7	109.6
141.7								
141.6	138.0							
142.9	138.6	147.2						
142.5	142.4	141.7	140.9	144.2				
	146.8	142.9	141.9	143.1	145.8			
		145.8	145.4	146.3	146.4	148.1		
			141.0	141.9	141.9	142.8	142.9	
				142.8	142.9	144.0	143.5	143.3

TABLE 3 Territorial analysis of general government expenditure, 1991–92

	ENGLAND	*SCOTLAND*			*WALES*		
		Territorial Programme	*Other*	*Total*	*Territorial Programme*	*Other*	*Total*
Defence							
Overseas services							
Agriculture, fisheries, food and forestry	1,045	281	19	300	176	17	193
Trade, industry, energy and employment	3,260	592	116	708	189	187	376
Roads and transport	6,037	755	1	755	433		433
Housing	4,503	700		700	343		343
Other environmental services	6,154	891		891	565		565
Law, order and protective services	9,092	980	44	1,024		403	403
Education	24,261	3,067	229	3,296	1,250	227	1,477
National heritage	1,045	132		132	57		57
Health and personal social services	30,315	4, 016		4,016	1,996		1,996
Social security	56,712		5,893	5,893		3,529	3,529
Miscellaneous expenditure	4	168		168	62		62
Public Expenditure on Programmes	142,427	11,581	6,301	17,882	5,071	4,363	9,434
Privatization proceeds							
General government debt interest							
Other accounting adjustments							
General Government Expenditure							

Note: Miscellaneous expenditure includes contributions to the European Communities and expenditure associated with general maintenance of government, such as tax collection and population registration. Because the territorial analysis was carried out much earlier than the finalization of table 2.5 and because of classification changes in the 1992 PES which could not fully be adjusted for, there are major differences between functional totals in tables E7 and 2.5.
Source: Treasury (1993, Tables E7 and 2.5).

Table 4 is the GGE counterpart to table 2's per capita identifiable expenditure relatives. Unlike for table 2, it is not necessary to rework the published data because of the stability inherent in GGE definitions. The earliest year for which identifiable data are available on a GGE basis is 1984–85. The relatives in 1991–92 for Scotland (114.6) and for Northern Ireland (137.0) were the lowest they have been for many years, though the change of bases means that direct comparisons before 1984–85 are not possible. There is no theoretical reason why the substitution of GGE for the old planning total as the basis for identifiable expenditure relatives should affect the trend of these relatives. The suddenness and timing of these changes in relatives suggests that the differential effects of recession is the dominant factor.

The 1993 switch to the New Control Total

The substitution in 1993–94 of the New Control Total (NCT) for the (new) planning total has little effect on territorial aggregates because Local Authority

£ million

NORTHERN IRELAND			*UNITED KINGDOM*				
Territorial Programme	*Other*	*Total*	*Identifiable*	*Non-identified*	*Total as per Table E7 of Cm 2219*	*Data Revision Adjustment*	*Total as per Table 2.5 of Cm 2219*
				23,015	23,015	10	23,025
				3,110	3,110	11	3,121
197	1	198	1,736	1,491	3,227	(149)	3,078
478		479	4,823	2,435	7,258	(130)	7,128
161		161	7,386	1,487	8,873	298	9,171
255		255	5,800		5,800	24	5,824
229		229	7,841	192	8,033	(261)	7,772
820	35	855	11,374	1,707	13,081	(35)	13,046
1,172		1,172	30,206	238	30,444	(879)	29,565
			1,234	240	1,474	1,055	2,529
1,165		1,165	37,492	52	37,544	(138)	37,406
2,088	16	2,104	68,237	1,794	70,031	(49)	69,982
65		65	299	5,538	5,837	66	5,903
6,631	52	6,682	176,425	41,300	217,725	(175)	217,550
							(7,923)
							17,080
							9,389
							236,096

Self-Financed Expenditure (LASFE) remains outside the territorial programmes. Indeed, LASFE is never attributed to countries. However, data comparability has been substantially affected by non-negligible changes in the way in which public expenditure is measured and by transfers of functions between departments for which comprehensive restatements of earlier data are not possible (Treasury 1993; Heald 1993).

III INTER-COUNTRY AND INTRA-ENGLAND DIFFERENTIALS

Differentials within the United Kingdom

Within contemporary political debate, claims are heard to the effect that England subsidizes Scotland (Pearce 1987) and that Scotland subsidizes England (Salmond 1989). The empirical evidence shows a continued advantage to Scotland in terms of both per capita identifiable expenditure and (proxied) per capita block expenditure. Salmond's claim rests decisively upon assumptions about who 'owns' North Sea oil, an issue well outside the scope of this article. However, the allegations that Scotland is heavily subsidized have been explicitly based upon the identifiable expenditure relatives. It is such figures on

TABLE 4 Identifiable public expenditure relatives: expenditure per capita as % of UK identifiable expenditure per capita, 1984–85 to 1991–92 (GGE basis)

	1984–85	*1985–86*	*1986–87*	*1987–88*	*1988–89*	*1989–90*	*1990–91*	*1991–92*
ENGLAND								
19 December 1989, cols 181-90	95.9	95.7	95.6	95.4	95.0			
13 December 1990, cols 449-60		95.8	95.6	95.4	94.9	95.4		
Statistical Supplement to 1991 Autumn Statement			95.5	95.3	94.9	95.5	96.0	
Statistical Supplement to 1992 Autumn Statement				95.6	95.2	95.8	96.1	96.8
SCOTLAND								
19 December 1989, cols 181-90	121.0	121.8	121.8	123.1	123.3			
13 December 1990, cols 449-60		121.3	121.6	123.1	123.1	121.8		
Statistical Supplement to 1991 Autumn Statement		121.8	123.6	123.1	120.8	118.6		
Statistical Supplement to 1992 Autumn Statement				121.5	121.6	119.1	118.2	114.6
WALES								
19 December 1989, cols 181-90	106.3	105.7	108.5	109.4	109.4			
13 December 1990, cols 449-60		105.6	108.2	109.4	110.0	106.8		
Statistical Supplement to 1991 Autumn Statement			109.3	110.0	111.4	109.5	110.0	
Statistical Supplement to 1992 Autumn Statement				109.3	110.2	107.8	109.0	106.8
NORTHERN IRELAND								
19 December 1989, cols 181-90	144.5	146.5	146.2	146.0	159.4			
13 December 1990, cols 449-60		147.9	148.8	147.5	160.0	155.1		
Statistical Supplement to 1991 Autumn Statement			146.9	146.6	158.6	151.7	142.6	
Statistical Supplement to 1992 Autumn Statement				145.8	158.1	151.1	141.5	137.0

Note: Identifiable public expenditure is defined in relation to GGE.
Source: *Hansard* (as cited) and Treasury (1992a, 1993)

identifiable expenditure, showing an 'advantage' to Scotland, which have increasingly provoked attacks by certain MPs representing English constituencies who have portrayed the existing position as an injustice to England and the English regions.

Scotland undoubtedly fares well on the *measured* relatives. It seems unlikely that the expenditure differentials revealed by tables 2 and 4 could be justified in full in terms of relative needs for public services, the criterion to which the Social Services Committee (1989) appealed. Only a repetition of the Treasury's devolution-related study (Treasury 1979) could provide the basis for informed judgement, and such an exercise would have to be conducted amidst heightened political controversy.

The difficulty in coming to a balanced judgement is that there are many *unmeasured* impacts of policy which ought also to be brought into the picture. Returning to figure 1, non-identified expenditure is either expenditure deemed to have been incurred on behalf of the United Kingdom as a whole, or expenditure for which the data do not allow identification. The dominant component (67 per cent in 1987–88 on the planning total basis and 56 per cent in 1991–92 on the GGE basis) is defence expenditure which, both through defence bases and defence contracting, has an important impact on regional economies. Whereas the rationale of defence facilities is to defend all UK citizens, such expenditure is 'regionally relevant' in that it creates direct employment and has regional employment and expenditure multipliers. The Ministry of Defence (1988, 1993) now publishes regional estimates of defence equipment spending. The internal shares within England are striking, with the South East and the South West together claiming 51.5 per cent of expenditure in 1991–92 and 49.0 per cent of employment, as against an estimated UK population share of 38.5 per cent at mid-year 1991, though these proportions are considerably lower than in earlier years. The calculated employment effects consider only supplier effects, not the indirect employment generated by the additional consumer spending which arises from defence jobs. Figure 1 does not incorporate either tax expenditures or coerced private expenditures. The Treasury has estimated from Family Expenditure Survey data from 1984 to 1986 that the regional share of the South East in mortgage tax relief was 40.7 per cent (the period not being specified) (Lamont 1989a), and 39 per cent over the financial years 1988–89 to 1991–92 (Maude 1991). More fundamentally, the concentration of political decision-making in London creates a magnet effect towards the South East, massively affecting the pre-tax, pre-public expenditure economy.

Differentials within England

There is no territorial conception of England within expenditure planning, itself a reflection of there being no natural focus for political decisions at the level of the English regions on either levels or mix of public expenditure. As a consequence, it has not until recently been possible to disaggregate identifiable expenditure in England. Following sustained pressure from the Treasury and Civil Service Committee (1989, pp. viii–ix; 1990, pp. xxxii–xxxiii) for territorial

TABLE 5 Identifiable expenditure in English regions, 1990–91

	Northern Region	*Yorkshire & Humberside*	*East Midlands*	*East Anglia*	*South East*	*South West*
Part A: Expenditure £ million	*ALLOCATION OF EXPENDITURE BY REGION*					
Agriculture, fisheries, food and forestry	3	7	9	(1)	30	11
Trade, industry, energy and employment	105	58	25	10	95	40
Roads and transport	268	478	404	300	2,303	452
Housing	107	202	143	49	1,439	151
Other environmental services	381	484	264	167	2,293	387
Law, order and protective services	380	594	409	194	2,702	491
Education and science	1,197	1,870	1,494	696	6,522	1,608
National heritage	47	69	51	21	282	56
Health and personal social services	1,632	2,601	1,859	987	9,671	2,264
Social security	2,971	4,402	3,257	1,546	14,583	3,997
Miscellaneous expenditure						
Total	7,090	10,765	7,915	3,970	39,919	9,456
Part B: Per Capita Expenditure £ per capita	*ALLOCATION OF EXPENDITURE BY REGION*					
Agriculture, fisheries, food and forestry	1	1	2	(1)	2	2
Trade, industry, energy and employment	34	12	6	5	5	9
Roads and transport	87	97	101	146	132	97
Housing	35	41	36	24	82	32
Other environmental services	124	98	66	81	131	83
Law, order and protective services	124	120	102	94	155	105
Education and science	389	378	372	338	374	345
National heritage	15	14	13	10	16	12
Health and personal social services	531	525	462	479	554	485
Social security	966	889	810	751	835	857
Miscellaneous expenditure						
Total	2,306	2,174	1,969	1,928	2,287	2,027

Source: Treasury (1993, pp. 146–8), including data corrections.

disaggregation within England, analyses by English regions (Treasury 1990, 1991, 1992a, 1993) have become available for 1987–88 to 1990–91. Preparation of data by English regions had a minimal political priority during the 1980s. Indeed, all the bureaucratic incentives were to avoid the issue because ministers in the Conservative government were quick to dismiss concerns about regional patterns as residual symptoms of the old distributivist politics said to have been decisively buried in 1979. Moreover, the abolition in 1979 of the Regional

West Midlands	*North West*	*Total of all regions*	*Unallocated*	*England*	*Scotland*	*Wales*	*Northern Ireland*
				TOTALS FROM 1992 TERRITORIAL ANALYSIS			
1	8	68	904	972	251	146	182
53	90	476	2,883	3,359	826	422	475
580	684	5,467	174	5,641	726	418	145
199	387	2,678	1,052	3,730	649	324	245
499	560	5,035	494	5,529	777	497	290
602	831	6,202	2,579	8,781	927	401	762
2,018	2,516	17,921	3,840	21,761	3,087	1,308	1,049
71	79	676	359	1,035	125	54	(3)
2,668	3,531	25,212	1,461	26,674	3,585	1,739	1,051
4,425	6,200	41,378	5,725	47,103	5,242	3,145	1,836
					142	55	55
11,115	14,886	105,113	19,471	124,584	16,336	8,508	6,090
				TOTALS FROM 1992 TERRITORIAL ANALYSIS			
0	1	1	19	20	49	51	115
10	14	10	60	70	162	147	299
111	107	114	4	118	142	145	91
38	61	56	22	78	127	112	154
96	88	105	10	116	152	172	182
115	130	130	54	184	182	139	480
387	394	375	80	455	605	454	660
14	12	14	7	22	25	19	(3)
511	553	527	31	558	703	603	661
848	970	865	120	985	1,027	1,092	1,155
					28	19	35
2,130	2,330	2,197	407	2,604	3,202	2,953	3,832

Economic Planning Councils, not of themselves of much importance, had diluted the organizational and statistical focus upon standard regions, thus accentuating the administrative obstacles to the preparation of regionally analysed English data. Extensive work on this subject was undertaken in the late 1970s and early 1980s by Short (1976, 1978, 1981, 1984). His later efforts to update this work foundered upon the unwillingness of government departments to cooperate to the same extent and because of the lower resources and priority then

attached to data collection (Short and Howard 1985).

Table 5 reproduces the expenditure and per capita data for 1990–91 as published in the *Statistical Supplement to the 1992 Autumn Statement* (Treasury 1993, pp. 146–48). This 'regional' analysis of England is conducted in parallel to the 'territorial' analysis of identifiable expenditure by country, with publication being lagged one year. Regional analysis is currently only available for three years, namely, 1988–89, 1989–90 and 1990–91. Out of identifiable expenditure in England in 1990–91 of £124,584 million, £105,113 million is total expenditure in all English regions, with £19,471 million being unallocated to region. The functional composition of the unallocated expenditure, of which 20 per cent is Education and Science and 29 per cent Social Security, suggests that improved data systems could greatly improve the regional analysis. Direct comparisons cannot be drawn between expenditure in Scotland and in individual English regions because of the large residual (16 per cent) of unallocated English expenditure. The main conclusion to be drawn from the regional analysis is the simple one, confirming Short's earlier work, that substantial variation within England has been masked by the earlier focus upon England as the unit of analysis.

IV THE PREDICTED EFFECTS OF THE BARNETT FORMULA

The rationale of the formula

It should be stressed that the Barnett formula applies *only* to block expenditure. From the Treasury's perspective, the objective of the formula system was to prevent further relative gains for Scotland and Wales after the establishment of devolved assemblies under the *Scotland Act 1978* and the *Wales Act 1978*. In turn, the Secretaries of State for Scotland and Wales would have viewed the formula as protecting their expenditure levels and composition from 'too close' Treasury scrutiny and targeting for 'exceptional' reductions. The first public references to the Barnett formula which have been traced are Andren (1979), Younger (1980), Committee on Scottish Affairs (1980) and Heald (1980b). The context within which the knowledge became public should be stressed: the newly elected Conservative government was announcing public expenditure cuts in volume terms. Paradoxically, such a context meant that expenditure relatives would widen slightly because (a) the rounding of population inherent in the 10:5:85 formula was favourable to Scotland and (b) expenditure reductions would be *pro rata* to rounded population, not to existing expenditure levels.

A crucial point to note about the operation of the Barnett formula is that there are two components to block expenditure:

(i) the *inherited expenditure base* as at the date of implementation of the formula; and
(ii) the *incremental expenditure* which has been determined by the operation of the formula.

The expenditure relative for 'block expenditure' in a country in a particular year

depends upon the relationship between these two components. Thus, initial expenditure advantages which have been 'frozen' in the base will depreciate over time as the base comes to constitute a smaller proportion of the block. Of particular importance for incremental expenditure is the relationship over time between the 'frozen' formula (10:5:85) and changing population relatives. In the case of Scotland, relative population decline plays a powerful role in terms of per capita relatives.

The Barnett formula is simple to state, though its implications are complex, particularly because unconnected changes in the public expenditure planning system (such as the introduction of cash planning in 1982 and the new planning total in 1990) have fundamentally affected the operation of the formula. A substantial part of the complexity of the effects of the Barnett formula stems from the switch for 1982–83 onwards from public expenditure planning in volume terms to cash planning.[7] What certainly was *not* on Treasury ministers' minds at the time was the effect of that switch upon the operation of the Barnett formula for territorial allocation. Nevertheless, the predicted erosion of the initial expenditure advantage is greatly accelerated by the switch to cash planning.

Theoretical predictions of the impact of the Barnett formula

The theoretical implications of the Barnett formula, as derived from formal mathematical modelling (Heald 1992), will now be presented. This exposition is based upon the *strict* application of the Barnett formula, with no bypass (i.e. all expenditure changes pass through the formula). Civil servant and ministerial participants in the territorial expenditure allocation process might consider that this account creates an overly mechanical view of a political process. However, it is essential to impose precision so that the properties of the formula can be systematically analysed. Subsequently, attention will turn to formula bypass, very much what participants have in mind when they refer to the political and administrative context of formula application.

As a preliminary, it should be noted that the period of operation of the Barnett formula must be divided into three sub-periods:

(i) from the adoption of the formula to the last year of volume planning (1981–82);
(ii) from the adoption of cash planning in 1982–83 to the last year of the 'old' planning total (1989–90);
(iii) from the adoption of the new planning total in 1990–91.

The important break-points which demarcate the three sub-periods demonstrate how sensitive the operation of a seemingly simple formula can be to unrelated changes in the public expenditure planning system.

Definitive conclusions about the Barnett formula can only be reached when there are counterfactual assumptions about the path of relative expenditure under either a different formula or no formula. Without such a counterfactual history, it is not possible to make unqualified statements about the 'effect' of the

formula. More modestly, however, it is possible to calculate what the effect of the operation of the formula on the public expenditure relatives would be on the basis of particular public expenditure scenarios. The important point to note is that the expenditure relative for a particular country in a particular year will depend upon two factors:

(i) the inherited expenditure base incorporating an in-built advantage or disadvantage, and the speed with which this 'asset' depreciates; and
(ii) the relationship between the *unchanging* proportions of the Barnett formula and the *changing* population shares.

The following propositions can be stated about the predicted effects of the formula (Heald 1992):

Proposition 1: For all three smaller countries, the proportions of the Barnett and 'son-of-Barnett' formulae were substantially less favourable than the relatives incorporated in the inherited expenditure base. Therefore, the continued strict application of these formulae would set in motion a long-term tendency towards convergence of expenditure relatives to the UK average, *provided that there was growth in the expenditure aggregates to which the formulae were applied.*

Corollary 1: In contrast, if these expenditure aggregates became smaller, the imposition of expenditure reductions in proportion to population rather than to expenditure would magnify the dispersion of relatives (Heald 1980b). This was indeed the context in which the existence of the Barnett formula became public knowledge in late 1979; the incoming Conservative government was seeking reductions in the *volume* of public expenditure, the basis on which public expenditure planning was then conducted.

Proposition 2: The population rounding inherent in 10:5:85 (Barnett) and 2.75:100 ('son-of-Barnett') has a non-trivial effect. Taking 1976 populations, Scotland's share of GB population was 9.57 per cent (10 was a rounding up); Wales's was 5.12 per cent (5 was a rounding down); and England's was 85.31 per cent (85 was a rounding down). Obviously, the smaller the population proportion, the greater the potential rounding error involved in the use of integers. The ratio in 1976 of Northern Ireland's population to GB population was 2.79 per cent (2.75 was a rounding down).

Proposition 3: The 'frozen base advantage' depreciates as the proportion of 'inherited' block expenditure diminishes as a proportion of total block expenditure. Consequently, the switch to cash planning for 1982–83 onwards was profoundly important because the inherited base ceased to be revalued to the current year's price level and would thus fall more rapidly as a proportion of the block total.

Proposition 4: Provided that the Barnett formula maintains fixed proportions, relative population decline will, to a greater or lesser extent, offset the 'incremental expenditure' convergence effect. In the long run, it is implausible that the Barnett formula will not respond to marked changes in relative

populations. In the short run, the view which is taken about this 'benefit' to Scotland will depend, *inter alia*, upon whether the focus is upon *total* Scottish welfare or *per capita* Scottish welfare. Whether higher relatives implied higher levels of service would depend upon the relationship between fixed and variable costs of provision, and upon relative service utilization/participation rates.

It is important to stress that these are statements about long-run tendencies, given the consistent application of an unchanged formula and the absence of bypass. If such bypass is *ad hoc* rather than systematic (in the sense of following some rule), important caveats have to be entered. Even with strict application, these results would unfold over a number of years. However, a further proposition can be added which must necessarily hold in each year of the operation of the Barnett formula.

Proposition 5: If the formula had exactly reflected population shares and these remained constant through time, the percentage increases in English equivalent expenditure would be higher than the formula-driven percentage increase in the Welsh block which in turn would be higher than the formula-driven percentage increase in the Scottish block. This is an arithmetical consequence of the formula consequences for Scotland and Wales being generated by the lower English expenditure base, and of Scotland's expenditure differential over Wales. Accordingly, it is incorrect to examine percentage changes in the Scottish and Welsh blocks and then to suggest that higher Welsh percentage increases indicate a branch of the Barnett formula. Such differentials are a natural outcome of the separate treatment of the expenditure base and expenditure increment. To make matters even more complicated, the relationships between formula-driven percentage increases have in practice been *significantly modified* by the extent of rounding of base-year population shares inherent in 10:5:85 and by changing population relatives.

V ESTIMATION OF BLOCK PROXY EXPENDITURE RELATIVES

The operation of the Barnett formula has been shrouded in secrecy, and the figures for 'equivalent English expenditure' have never been published. Perhaps the territorial issue is not very high on the Treasury's set of priorities, and the territorial departments themselves have certainly been coy about numbers, fearing that too much publicity would stir up complaints from England. The post-Autumn Statement public expenditure announcements by the respective Secretaries of State present the figures in ways which make it impossible to identify formula-determined expenditure. Moreover, the now superseded *Commentaries* on each of the territorial programmes were unforthcoming about the numerical operation of the Barnett and 'son-of-Barnett' formulae. On the basis of existing published data, it is impossible to calculate relatives for that expenditure contained within each territorial department's block (block expenditure relatives). Consequently, it is not possible to test directly the theoretical predic-

TABLE 6 Three sets of proxy relatives for block expenditure, 1979–80 to 1987–88

'Scottish block proxy' expenditure per capita as % of UK expenditure on same definition

	1979–80	*1980–81*	*1981–82*	*1982–83*	*1983–84*	*1984–85*	*1985–86*	*1986–87*	*1987–88*
England	96.0	95.7	95.0		94.4	95.5	95.1	95.2	94.7
Scotland	123.3	125.7	130.1		131.7	127.3	129.0	128.6	130.4
Wales	101.4	101.2	102.6		106.3	99.2	100.9	102.7	106.0
Northern Ireland	141.2	141.2	147.2		152.0	148.1	152.0	146.7	149.7

'Welsh block proxy' expenditure per capita as % of UK expenditure on same definition

	1979–80	*1980–81*	*1981–82*	*1982–83*	*1983–84*	*1984–85*	*1985–86*	*1986–87*	*1987–88*
England	96.0	95.8	94.9		94.5	95.4	95.2	95.4	94.8
Scotland	126.1	128.0	133.9		134.4	130.8	131.3	130.9	133.2
Wales	103.5	103.2	105.0		108.4	101.7	103.1	105.2	108.9
Northern Ireland	127.3	126.6	132.3		136.9	134.3	135.9	129.5	131.5

'Northern Ireland block proxy' expenditure per capita as % of UK expenditure on same definition

	1979–80	*1980–81*	*1981–82*	*1982–83*	*1983–84*	*1984–85*	*1985–86*	*1986–87*	*1987–88*
England	96.2	96.3	95.9		95.8	96.2	95.9	95.9	95.7
Scotland	118.2	117.6	120.1		120.7	119.1	121.5	121.5	122.9
Wales	106.1	106.1	106.9		107.8	104.1	105.1	107.8	109.2
Northern Ireland	143.7	142.7	144.0		145.2	143.7	144.0	139.0	139.7

Memorandum entries: Identifiable expenditure per capita as % of UK identifiable expenditure

	1979–80	*1980–81*	*1981–82*	*1982–83*	*1983–84*	*1984–85*	*1985–86*	*1986–87*	*1987–88*
England	96.0	96.0	95.7		95.5	95.9	95.6	95.6	95.4
Scotland	118.8	118.8	121.2		121.6	120.3	122.8	122.4	123.8
Wales	106.4	106.8	107.4		108.7	104.9	105.9	108.6	109.7
Northern Ireland	147.7	146.5	147.2		149.4	148.2	148.1	142.9	143.3

Note: There is no written parliamentary answer for 1982–83.
Source: Heald 1992, pp. 38–43

tions about the impact of the Barnett formula.

However, it is possible to calculate proxies for each of the three different block definitions: the Scottish block proxy; the Welsh block proxy; and the Northern Ireland block proxy. For symmetry with the identifiable expenditure figures, these relatives are calculated on the basis of UK = 100. It should always be remembered that the Barnett formula relates the Scottish (Welsh) block *not* to UK equivalent expenditure but to *its* English equivalent expenditure; whilst the Northern Ireland formula relates Northern Ireland block expenditure to *its* GB equivalent expenditure.

Table 6 displays the relatives on each of the three block definitions for all four countries for the period 1979–80 to 1987–88, excluding 1982–83 (the year for which there was no written parliamentary question). It should be noted that, because the territorial disaggregation is only ever published for the latest year, there is only one entry for each financial year. Accordingly, year-on-year changes might be expected to be somewhat erratic because of expenditure redefinitions, programme reclassifications and data errors. For reference purposes, the corresponding identifiable expenditure relatives are displayed as memorandum entries at the bottom of table 6.

Two conclusions are self-evident. First, the relatives are sensitive to block definition: note particularly the effect on the Northern Ireland relative in 1987–88 of moving from a 'Scottish' to a 'Welsh' definition: the relative falls from 149.7 to 131.5, solely as a consequence of excluding expenditure on law, order and protective services.[8] Second, the empirical results do not conform to the theoretical predictions of section III (p. 157) that the operation of the Barnett formula would lead to a compression of expenditure relatives. Over the period 1979–80 to 1987–88, Scotland and Wales improved their positions on each of the three expenditure definitions, relative to both the UK and England. Narrowing the public expenditure definition from identifiable expenditure to the three proxies magnifies the differences between Scotland and England. Social security, accounting for about 80 per cent of the difference between identifiable expenditure and block expenditure, has expenditure relatives much closer to 100 in Scotland, Wales and Northern Ireland than those for expenditure managed by the territorial departments.

On the expenditure definition of the Scottish block proxy, the Scotland relative (UK = 100) rose from 123.3 (1979–80) to 130.4 (1987–88), with the gains being made before 1983–84. Switching to the base of England = 100, the Scottish relative in 1987–88 was 137.7. On the Welsh block proxy, the comparable figures for Wales were 103.5 to 108.9 (UK = 100) and 114.9 (England = 100). In contrast, the Northern Ireland relative fell from 143.7 to 139.7 (UK = 100). Despite data deficiencies which necessitate the use of proxies (Heald 1992), there seems no reason to suppose that these empirical estimates are not robust. The data do not square with the predictions derived from the formal model of the Barnett formula.

Evidence on earlier trends is contained in Treasury (1979) for six main programmes then intended for devolution. Over the period 1959–60 to 1977–78,

Scotland had made gains from 105 to 128; Wales from 95 to 100; and Northern Ireland from 88 to 141 (England = 100). It is with reference to such earlier sharp changes in relatives that the 1980s have been described here as a period of relative stability, though characterized by continuing gains by the smaller countries.

VI EXPLANATIONS FOR THE ABSENCE OF CONVERGENCE

The significance of relative population change

Relative population change crucially affects the impact of formula operation as measured by per capita relatives. For the period over which a base-date relative-population territorial formula such as Barnett remains operational, population trends mean that a divergence develops between the fixed relative populations incorporated in the formula and the 'current' relative populations; the latter are always used for calculating per capita relatives. Moreover, even at the date upon which the territorial formula is based, the rounding inherent in the formula may lead to differences between the relative populations built into the formula and the then current population relatives. The Barnett formula was established in 1978, probably using 1976 population relatives (though rounding removes the importance of precisely which year's figures were taken).

At mid-year 1976, the population proportions within Great Britain were as follows: Scotland, 9.57 per cent; Wales, 5.12 per cent; and England, 85.31 per cent. By 1992, these figures had changed markedly: Scotland, 9.14 per cent; Wales, 5.16 per cent; and England, 85.70 per cent. Northern Ireland's population expressed as a percentage of GB population increased from 2.79 per cent in 1976 to 2.87 per cent at mid-year 1992. Relative population changes can offset or reinforce formula-induced changes in block expenditure relatives.

The role of formula bypass

In addition to the relative population change effect, the failure of the block expenditure relatives to follow the paths predicted by propositions 1, 3 and 4 (see section IV, p. 161) is attributable to formula bypass. Despite the impression given by the brief official explanations of the Barnett formula (Treasury 1989b), the formula has been bypassed in significant ways. Five channels have thus far been identified:

(i) additional expenditure allocations which arise during the financial year, as, for example, National Health Service pay awards, are fixed on the basis of costed amounts, and not on the basis of the Barnett formula;
(ii) the *outturns* for local authority expenditure have reflected decisions by individual local authorities whose behaviour patterns have not necessarily been uniform in England, Scotland and Wales;
(iii) certain expenditure functions within the Scottish and Welsh blocks may have no English counterparts, thus necessitating some other basis for determining expenditure increases;

(iv) certain expenditure changes, perhaps initiated for macroeconomic reflation or deflation, are allocated on bases other than those of the Barnett formula; and

(v) there is an important way in which the mathematical formulation of the Barnett formula from which the propositions were derived represents an oversimplification of reality. Each year, in the context of the annual PES, the Treasury must generate a new horizon year. When Year 1 of PES_{t-1} becomes the estimated outturn year of PES_t, Years 2 and 3 of PES_{t-1} become Years 1 and 2 of PES_t, and an entirely new Year 3 of PES_t is created. This Year 3 for the Scotland block could be generated by adding 10/85 of incremental English equivalent expenditure to Year 2, but, in fact, a constant uplift of 2.5 per cent is applied across all PES programmes.

The practical circumstances leading to bypass (i) can easily be understood. The government announces that it has accepted a pay review body award for nurses and then states that it will fully fund the pay award. Were the money to be channelled through the Barnett formula, a country with a higher-than-UK-average level of nursing staff would be 'underfunded'. Nevertheless, the existence of this bypass punches a huge hole in the rationale of the Barnett formula. The timing of particular pay settlements might acquire great importance, if the announcement date were to determine whether the incremental expenditure goes through the formula or through the bypass.

Bypass (ii) is surprising, in that one might have expected overspending from one year to be recouped in later years, if not immediately, at the expense of other block expenditure.

Bypass (iii) has occurred with regard to water and sewerage expenditure, though there was no confirmation of this in the public expenditure statements following the 1990 Autumn Statement (Lang 1990b; Scottish Office 1990a,b). However, the Scottish Office (1993b, p. 55) has subsequently confirmed, though without quantification, that 'special additions were made to the Block for water and sewerage', not as 'direct formula consequences' but as a counterpart to the cash injection of £1,572 million into eight of the ten water plcs which was part of the financial restructuring of the water and sewerage industry in England and Wales. This privatization of the Regional Water Authorities in England and Wales in 1989 eliminated the erstwhile comparators for the water and sewerage expenditure of Scottish regional and island councils, just when the government was coming under pressure from the Commission of the European Communities to improve water quality and to reduce pollution. Without a departure from the Barnett formula, such expenditure would have had to be at the expense of other programmes within the Scottish block. The Scottish block's dependence on formula consequences of incremental English expenditure certainly poses difficulties in policy areas where the equivalent English expenditure has disappeared because of service termination or privatization.

Bypass (iv) occurred when the 1992 Autumn Statement announced a special package of construction-related work to stimulate the economy. Scotland ob-

tained an additional £70 million which the Secretary of State allocated with a view to 'early completion or early embarkation upon the work' (Lang 1993, Q. 27). These additional amounts did not go through the formula but were allocated between countries in order to achieve 'broadly the same net benefit per head' (Scottish Office 1993b, Q. 6).

Bypass (v), irrespective of whether regarded as a bypass or as a structural part of the formula, has profound implications, not least because the path of territorial relatives becomes a function of the inflation rate. With low inflation, especially if accompanied by low growth of cash expenditure on equivalent English programmes, a substantial proportion of the increase in block expenditure will originate from this uplift procedure (proportional to existing expenditure) rather than from formula consequences (proportional to the 1976-rounded populations embodied in the Barnett formula). Without information on the uplift factors used in the generation of new horizon years throughout the period of application of the Barnett formula, it is impossible to assess the quantitative importance of bypass (v). Proportional uplifts are, of course, more favourable to the territorial programmes than would be the channelling of an equivalent amount of money through the Barnett and 'son-of-Barnett' formulae.

The quantitative importance of these bypasses cannot be calculated on the basis of published information. Without detailed knowledge about bypass, it is impossible to replicate the territorial allocation mechanisms, even in the cash planning world in which there are no problems associated with revaluation of earlier expenditure.

VII RECALIBRATION OF THE BARNETT FORMULA

The transparency of the system has been seriously impaired because tables have never been published for the two definitions (Scotland and Wales) of English equivalent expenditure or for GB equivalent expenditure (for the Northern Ireland block). Indeed the *only* indication of what expenditure is included in the respective blocks is provided in the 'Other Services' section of each territorial programme (Northern Ireland Department of Finance and Personnel 1993; Scottish Office 1993a; Welsh Office 1993). The territorial departments themselves suffer an enormous information handicap relative to the Treasury because of the way in which they do not have direct access to the Treasury's PES databases. In consequence, they are vulnerable to the Treasury's management of the PES process as well as to the government's media management during the fraught public expenditure climate of the 1990s. It appears that there were no major changes in the coverage of the expenditure blocks from their establishment until 1990; subsequent changes have been frequent and significant (Scottish Office 1993b, Q. 2). There has never been any published acknowledgement that discussion of the application of the formula, without reference to the channels of bypass, is inevitably misleading.

One policy question on which the research sheds light relates to the merits, from the viewpoint of the smaller countries, of the Barnett formula. With the

benefit of hindsight, would the then Secretary of State for Scotland, Bruce Millan, have been advised to accept the Barnett formula? Formal analysis would have been in error on two counts: the switch to cash planning would not have been anticipated, and neither would the emergence of extensive (favourable to Scotland) bypass. The proposed formula would have been viewed as automatically regulating the Scottish block level and insulating its composition from Treasury 'interference', albeit at the price of accepting lower percentage increases to block programmes than Wales or England. One of the strongest lessons of this article's account of territorial financial mechanisms concerns the unpredictability of outcomes. The effect of particular territorial financial mechanisms can depend crucially upon seemingly unconnected decisions (e.g. the impact of the switch to cash planning upon the operation of the Barnett formula).

Despite the switch to cash planning, the Barnett formula protected Scotland's block expenditure relative at a time of diminished Scottish political influence within the United Kingdom. On the other hand, it froze Wales's disadvantage relative to Scotland. It is surprising that the formula survived unchanged for so long. There is, however, some evidence that the Treasury wished to alter or abandon the formula in 1986, but that such changes were successfully resisted by the Scottish Office (Woodifield 1986; MacMahon 1989; Heald 1992, pp. 53–54).

The issue of relative public expenditure shares has ceased to be a somewhat esoteric matter of public administration and academic research, and has suddenly acquired an unprecedented level of public exposure. Relative public expenditure levels have become more overtly politicized, with the hitherto private drama being performed on a public stage. What started in the mid-1980s as a provocative probing of Scottish public expenditure advantages by tinder-dry Conservative MPs for English constituencies (the natural allies of the then Scottish Office minister, Michael Forsyth) has been generalized into much broader criticism of Scotland's 'advantages'. This process has been encouraged by the present Secretary of State for Scotland's (Ian Lang) 'thinking aloud' about 'excessive' local government expenditure in Scotland (Lang 1990a; Midwinter and Monaghan 1990; Scott 1990). During the extended 1992 general election campaign, Scottish Office ministers loudly proclaimed Scotland's public expenditure differential over England as a reason for rejecting constitutional change (Scottish Office 1992b), without any regard for the potential repercussions at the hands of the Treasury.

It was therefore unsurprising when the Barnett formula came under threat in the first PES of the fourth Conservative term (Trotter 1992; *Herald* 1992; Scott 1992; Scott, Copley and Robertson 1992). Mitchell (1992) has dismissed such newspaper exclusives as an attempt by the Scottish Office to bolster the image of the Secretary of State for Scotland as 'the saviour of Scottish interests'. If this interpretation is correct, the Scottish Office was playing with fire. Nevertheless, the present Secretary of State for Scotland has declared himself well satisfied with the maintenance of the Barnett formula with recalibrated proportions to

reflect 1992 relative populations. The Scottish Office has received an assurance that the operation of the Barnett formula will not lead to a reduction in Scotland's public expenditure relative below that justified on the basis of relative needs (Lang 1993, Q. 4). A political judgement therefore has to be made by the Secretary of State or his successors as to whether/when to request a formal needs assessment study in order to re-determine the scale of additional needs. The existence of a formula, and the associated expenditure-switching powers within the block, are regarded as highly beneficial to Scotland (Heald 1990).

VIII CONCLUSION

Substantial differences in levels of per capita identifiable expenditure undoubtedly exist between the four countries of the United Kingdom. The analytical and empirical sections of this article have explored the properties of the Barnett formula and examined the available data for evidence of the predicted effects. There was no sign of the predicted convergence of per capita block expenditure over the period 1979–80 to 1987–88. Although proxies for block expenditure had to be used, the results are believed to be robust. Excluding expenditure within the Scottish block which has no English equivalent, the Treasury has calculated the per capita block relative for Scotland in 1993–94 to be 138 (England = 100) (Scottish Office 1993b, Q. 2). The extent of bypass, together with relative population change, are the probable explanations for the failure of the predicted convergence of block relatives to materialize. The marked convergence of identifiable relatives is attributable to the differential effects of recession.

Heightened political controversy attaches to these matters in a political context when Scotland's 'advantages' are increasingly questioned in England and Scotland's constitutional relationship with England is recurrently debated in Scotland. The practical and political importance of changing population relatives is obvious, though conflicting responses are inevitable. On the one hand, rigidities in the allocation of representation in the UK Parliament and in formulae for the allocation of public expenditure lead to claims that the countries other than England are subsidized and/or overrepresented. On the other hand, England's increasing dominance within the United Kingdom is portrayed as one of the symptoms of chronic imbalance in UK political institutions.

NOTES

1. Without access to unpublished government papers, it is impossible to be absolutely certain about starting dates; the collective memories of government departments can be surprisingly weak on such matters. A decision within, say, the 1980 PES would take effect from the first year (1981–82) of the white paper published in early 1981.
2. The most substantive difference relates to law, order and protective services where Home Office responsibilities cover both England and Wales; the formula consequences for Scotland are therefore calculated as 10/90 of incre-

mental expenditure in England and Wales. The terms 'comparable expenditure' and 'English equivalent expenditure' are both used, with the latter being preferred here.

3. There is a terminological confusion regarding the Northern Ireland programme because what is described in the published documents as the 'Northern Ireland block' is not comparable to the Scottish and Welsh blocks: 'The allocation of expenditure for future years among the services included in the Northern Ireland block (except social security benefit expenditure) may be altered at the discretion of the Secretary of State' (Treasury 1989b). The Northern Ireland formula and the expenditure-switching discretion of the Secretary of State for Northern Ireland applies to a sub-total within (what is officially described as) the 'Northern Ireland block'.
4. Various terms (unidentifiable, non-identifiable and non-identified) have been used interchangeably in Treasury publications, even though they do not all convey the same meaning, namely whether expenditure could be or has been identified. The term 'non-identified' is used throughout this article.
5. As from 1993–94, outside the data period of this article, expenditure on universities has been transferred into the Scottish and Welsh territorial programmes.
6. Taking 1987–88, the latest final outturn in the 1989 public expenditure white paper (Treasury 1989a), Scottish block is £7,528 million on the 'old' planning total definition (Scottish Office 1989) and £7,252 million on the 'new' planning total definition (Scottish Office 1992a).
7. The switch to cash planning was announced in the 1981 Budget statement and implemented for the 1981 PES which culminated in the 1982 white paper (Treasury 1982) and in which 1982–83 was the first planning year. However, the 1981 PES was itself transitional because its starting point was the constant-price plans of the 1981 white paper (Treasury 1981).
8. Expenditure on the armed forces in Northern Ireland appears in the defence programme and is treated as non-identified.

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