Where did all the Money Go?

Measuring Public Expenditure in the English Regions*

Iain McLean
Nuffield College, Oxford

Christopher Wlezien
Nuffield College and University of Oxford

Gavin Cameron
Lady Margaret Hall and University of Oxford

* This paper is based on research for the Office of the Deputy Prime Minister (ODPM), entitled 'Identifying the flow of domestic and European expenditure into the English regions.' Many people assisted with the data collection, including Richard Coggins, Laura Flamand, Heather Hamill, Cameron Hepburn, Paul Ingram, Radomir Jansky, James Kemp, Rosalind Levacic, Sarah Love, Michael Noble, Trudy Owens, Andrew Ratcliffe, Stuart Soroka, Arthur Spirling and Alison Wolf. Many others provided helpful comments along the way, especially Meg Green, Paul McCafferty, Allen Ritchie, Wendy Russell Barter, Ian Scotter, Philippa Todd and members of the ODPM Advisory Group.

Where did all the Money Go?

Measuring Public Expenditure in the English Regions

Abstract

Good quality budget data are of obvious importance to policymakers. We consider data on the flows of public expenditures into the English regions. The aims are to: (1) assess the accuracy of the existing data; and (2) develop and apply a methodology for providing better estimates of regional expenditure. Our analysis begins with the Treasury's own PESA data, which relies on returns from the various government departments. We reveal important variance in practices that powerfully affect the regional numbers. We provide an analysis of likely inaccuracies and assess the likely causes. We estimate that in our sample year 2000-01, expenditure in London on Education was seriously understated. Expenditure on Agriculture was grossly overstated in London and seriously understated in East of England.

JEL classification: H50; H73; H77.

Introduction

Policy makers and policy commentators need good public expenditure data for subnational units for many reasons. In England these include:

- to know whether regional formulas have the expected effects or not;
- to know where the demand for demand-driven programmes lies;
- to compare identifiable public expenditure in the English regions with that in Scotland, Wales, and Northern Ireland;
- to supply data for such regional governance bodies as the Government Offices, the Regional Development Agencies, and the regional assemblies, some of which may soon become directly elected bodies;
- to check whether regional policy has been implemented appropriately;
- to assess progress towards Public Service Agreement (PSA) targets; and
- to honour the 'National Statistics' badge of quality (cf ONS 2002) which the relevant data display.

We report the results of an 18-month investigation into the quality of the published data on the flow of public expenditure into the nine standard regions of England. The investigation was commissioned by the then DTLR (now ODPM) with support from the Treasury and the Department for Environment, Food, and Rural Affairs (DEFRA). The full report (McLean et al 2003) is available on-line at www.nuff.ox.ac.uk/projects/odpm.

We analysed the data that the UK Treasury (HMT) collect annually from departments and publish in *Public Expenditure: Statistical Analyses* (PESA) for the most recent financial year for which we could examine the underlying data sources, namely 2000-01. The Treasury data are the only UK series that reports expenditure by the financial year, which is more relevant for policy than the calendar year. The Treasury identifies expenditure which it deems to be 'for' the regions of England, and excludes expenditure 'in but not for' a region from its regional expenditure tables. The latter class

includes expenditure to obtain UK-wide or supranational public goods such as defence, scientific research, foreign policy, and overseas aid.

The PESA Data

HMT receives *national* spending data by sub-programme code (SPROG) from the various Departments. SPROGs are departmentally-defined programme codes that are a basic working unit of analysis. HMT makes various adjustments to these figures in applying its Total Managed Expenditure (TME) definition. As a result, the SPROG data that HMT use to create the functional series in PESA are slightly different from the data that Departments submit.

HMT then uses the results for its annual TA (Territorial Analysis) and RA (Regional Analysis) exercise. For the TA exercise, which happens first, the Treasury sends the revised SPROG data for each function to certain Departments and asks them to disaggregate the numbers to totals for each of England, Scotland, Wales, and Northern Ireland.[1] The TA exercise is sent to those Departments which have UK-wide, or GB-wide functions, but excludes overseas departments and Defence, all of whose expenditure is deemed to be for the provision of public goods to the UK as a whole. This paper concerns only the subsequent RA exercise, in which those Departments with responsibilities in England are circulated with a request to disaggregate the numbers in their SPROGs to each of the nine standard regions of England. The nine standard regions are as described in many government documents e.g., DTLR 2002.

For the RA exercise, Departments are sent figures for spending in England, by SPROG. Departments use different procedures to allocate SPROG data. Most do not provide actual spending figures for each SPROG; rather, they use an 'indicator' variable, such as regional population estimates or regional GDP, to divide the summed England totals (the total spent on all listed SPROGS) for each year into regional estimates. Others use more program-specific indicator variables. Others again have good regional data of their own.

Were all departments able to accurately report regional spending by SPROG, generating functional or sub-functional series would be relatively simple. In PESA, the data are reported at the

[1] See, e.g., McLean and McMillan (2003).

level of eleven standard 'functions of government (Table 1). SPROGs can be aggregated into functions or sub-functions.[2] They are a basic unit of analysis. Acquiring good regional figures by SPROG thus is the first essential step in building accurate functional or sub-functional series of spending by region. Indeed, while they are aware of their SPROGS, departments do not necessarily know about functions and sub-functions. These are HMT creations.

The RA spreadsheets include only those SPROGs that cover expenditure by government departments or agencies on their own account. A substantial part of UK government expenditure, however, is spent by local public authorities for purposes such as schools or policing. Final spending by local authorities, whether financed from their own resources or by central government grant, comprises about 25% of identifiable public expenditure (TME). For the regional PESA tables, the Treasury collects all data about local government expenditure from the annual *Local Government Financial Statistics* (LGFS) collected and published by the Office of the Deputy Prime Minister. These data are derived from the returns of local authorities themselves and are classified by 'service,' e.g., education, personal social services, police. The data can easily be aggregated up to higher levels, such as standard regions. No English local authority crosses the boundary of two standard regions. The Treasury deems all expenditure by English local authorities as being both 'in' and 'for' the region in which the authority lies. Based on our analysis, there is reason to be quite confident about the regional allocation of the LA data.

The Treasury draws together the two streams of data—Departmental and LA—to create the published PESA tables. The most relevant published tables are those of 'identifiable expenditure per head, by region and function' which are published in PESA each year for the three most recent financial years for which data exist…

Problems with the PESA data

Our initial desk inspection of the returns made to the Treasury by Departments in early 2002 showed that some of the data reported in PESA were unreliable. Each reporting department was invited to fill a spreadsheet containing nine columns (one for each English region) and as many rows as it had

[2] It is worth noting that SPROGs do not map *perfectly* into sub-functions or functions.

SPROGs. The columns were constrained to add up to the given total of expenditure in England, and the whole spreadsheet was constrained to add up to the Department's total identifiable expenditure for England. Some Departments gave full information derived from their own records, but by no means all did. Some left the entire spreadsheet blank, reporting only global totals for each region. The Treasury allowed them to do this by applying an 'indicator variable'. If requested, the Treasury would supply Departments with the nine regions' relative populations to use as an indicator variable. To apply relative populations as an indicator variable is to assign expenditure on an equal per capita (EPC) basis to each region. Some Departments filled in the rows for some but not all of the SPROGs. Others fully populated their spreadsheets, but using cell formulas that simply applied the EPC indicator variable. For those functions of government where the spreadsheets were uninformative or misleading, we cleaned them by removing unreliable rows, and where possible we then re-populated them using various imputation methods.

For one function of government, namely *Social Security* (relabeled *Social Protection* with effect from the PESA 2003 tables, Cm 5901, May 2003), our tests showed that the Department's own imputation methods were reliable when compared with the very similar results from our alternative methods. We did not amend the PESA data for this function of government. For all other functions of government, we examined the spreadsheets in detail. In some cases (e.g., *Education*), only one Department made an RA return for the function of government in question. The Department's SPROGs were listed in descending order of size on the spreadsheet. In other cases (e.g., *Law, Order & Protective Services*), data for one function of government came from more than one Department. In these cases, we first amalgamated the RA returns of the Departments and agencies concerned, and then arranged their combined SPROGs in descending order of size.

For each function of government, we then analysed the largest SPROGs one by one, until we had accounted for 80% of expenditure for the function reported through the RA process. We noted whether the reported regional totals were based on real data, on a reasonable apportionment method, or on an apportionment method that was either unexplained or unreasonable. We deleted the last class of data from the spreadsheet.

We classified the smaller SPROGs in the same way without examining them to the same level of detail. We thus divided the whole spreadsheet, for each function of government, into its reliable and unreliable components. As stated above we consider that all the data in LGFS, which come from authorities' audited accounts and are aggregated into a different spreadsheet in ODPM, are reliable.

For each function of government we therefore estimated the proportion of the total expenditure reported in *PESA* 2002–03 (Cm 5401/May 2002) that derives directly from demonstrably reliable data sources. This information is in Table 1.

-- Table 1 about here --

Column 1 of Table 1 lists the eleven standard functions of government in the exercise. Column 2 gives the average expenditure per head for England as reported in Cm 5401, Table 8.12b. Column 3 gives the total expenditure for England as reported in Cm 5401, Table 8.12a. Column 4 shows the total reported to the Treasury via the RA spreadsheets. By subtraction (column 5), the proportion of total expenditure for the function that did not come via the RA spreadsheets is assumed to have come via LGFS[3]. Column 6 gives our estimate, for each function of government, of the proportion of expenditure that seems reliable after the data cleaning exercise. Column 7 is the sum of columns 5 and 6. The two weighted average numbers at the bottom right of Table 1 are the overall summary conclusions.

Table 1 is deliberately pessimistic: it sets a lower bound. At least 64.6% of the reported public expenditure total in the English regions reported in Cm 5401, Tables 8.12a and b, is derived from reliable data. Of the flow that does not come via *Local Government Financial Statistics*, at least 51.1% is derived from reliable data. The true proportions are probably higher. Some large departments appear to have reliable methods of estimating regional shares of their spending, but did not report them on the Treasury spreadsheet. Comments on the individual functions of government follow.

In *Education*, the RA return reported all SPROGs on an equal per capita (EPC) basis. For some SPROGs, the Department stated this in the 'Method used' column of the spreadsheet. However,

[3] In *Housing,* the sum of expenditure reported in *LGFS* exceeded the total reported in *PESA*. We assume that the latter nets off capital receipts.

we found that the cell formulae for every single cell simply reported the England total for that SPROG multiplied by that region's share of the English population. We concluded that the entire spreadsheet return by DfES contained no real information, and had to be discarded as a first step in data cleaning.

In *Health and personal social services* the Department of Health grouped all its reported expenditures into just two lines of the table. However, our field research (McLean et al 2003 ch. 4) later showed that the Department holds real data on its expenditure outturns and is looking for ways to improve the data. Assuming that the Department's methodology is valid raises the proportion of the data which may be regarded as reliable from 64.6% to 85.9%.

In *Roads and transport*, all the DTLR (now DfT) SPROGs except one were of good quality. The exception was *Bus fuel grants*, which accounted for 8.7% of RA expenditure on this function. We found that a real amount was entered for London, and the remainder was assigned equally (not equally per capita) to the other eight regions. Each region was attributed an expenditure of £31.6 million on Bus Fuel grants in 2000–01.

In *Housing* we found that the largest single SPROG on the RA spreadsheets was already imputed by ODPM. This SPROG is for the *Housing Corporation*, an NDPB whose data we did not see at source. It reports through ODPM for this function. We consider that the Department's imputation method is reasonable. For other SPROGs, the details given by ODPM to our field researcher did not always coincide with those that appear on the RA spreadsheet. However, they do not differ by much and we have no means to determine which is the more correct. We have therefore determined that the data for *Housing* are as clean as we can make them.

In *Other environmental services* the data emanated from two departments – the then DTLR (now ODPM), and DEFRA. The former used real information from programme managers to populate the spreadsheet. The latter used equal per capita for all programmes. We concluded that the former contained valid data and the latter did not.

In *Law, order, and protective services* we found that the two large departments concerned (Home Office and the then Lord Chancellor's Department) entered most expenditure on an EPC basis. This is very unlikely to be a correct apportionment for most of their programmes, where there are reasons to believe that expenditure is uneven. For example, the police funding formula has numerous

weighting factors, and the incidence of prisoners and court cases is uneven. The only large SPROG for which EPC seems appropriate is *Immigration and Nationality* (£1.03 bn in 2000-01). Although expenditure on this SPROG could be expected to be concentrated in regions with ports and airports, it is reasonable to regard it as equally 'for' all the people of England. The small departments and agencies reporting for this function returned real data for some of their SPROGs (e.g., all data from the Crown Prosecution Service; data for London election costs from the then DTLR). In total, 21.9% of the expenditure reported on the RA spreadsheet for this function appeared to be reliable.

In *Trade, industry, energy and employment* the data were collected from as many as nine sources in central government – three Departments and six agencies. Where the information was based on real administrative data, or on EPC apportionment where that seemed reasonable (e.g., for a regulatory agency providing public goods to all the people of England), we accepted it. Some data were reported as EPC without a strong rationale for doing so. For most of its SPROGs, the DTI used regional GDP as a proxy. We found this surprising, as it implies that the richer a region, the more the DTI spends there. We think it more likely that the *poorer* the region, the more the DTI spends there – at least on demand-driven and many policy-driven programmes. Because it was impossible to determine the reliability of the 'GDP proportion' methodology without further investigation we marked its reliability as 0 in Table 1.

In *Agriculture, fisheries, food, and forestry* we found that most data from DEFRA (by far the largest contributor of data for this function) was based on a reasonable imputation method, namely *regional farm income.* However, the largest single SPROG, viz., *RPA – Direct payments under CAP,* accounting for 53.5% of the spending on this function, had been apportioned on an EPC basis. This had the effect that payments under the Common Agricultural Policy for London were the second-greatest of any English region. We therefore deleted the data for this SPROG to clean the return for this function.

In *Culture, media, and sport* all the RA data come from the Department of Culture, Media, and Sport (DCMS). The Department uses an imputation method for those SPROGs where it does not receive adequate data from its own NDPBs and agencies. The method is to use the same regional weightings as in the expenditure on the National Lottery, which is much the largest single SPROG for

this Department. There is a perception that London and the surrounding areas do disproportionately well out of the National Lottery. However, in 2000-01 by far the biggest beneficiary of the National Lottery according to the RA data was Yorkshire and Humberside, which received 2.81 times its population share of expenditure in this SPROG. By contrast London only received 0.66 times its population share and the South East only 0.47 times its population share. This is likely to be a 'lumpy' or one-off effect (it was a year of heavy expenditure on the Earth Centre at Doncaster) and is unlikely to be a reliable guide to the true expenditure on SPROGs for which the Department had no data. However, we do not know which those SPROGs are, so we have not removed any data.

In *Social Security*, as reported above, all data were of good quality. In *Central administration and miscellaneous,* a number of departments, such as the Crown Estate Office and the Land Registry produced returns. On inspection, their returns were of variable quality. However, we question whether such departments should be in the PESA exercise at all. PESA attempts to record expenditure 'for' rather than 'in' the English regions. The appropriate assumption for *Central administration and miscellaneous* is surely that the expenditure is equally 'for' every citizen of England. The total on this line should be recorded on an EPC basis. For data cleaning purposes, we therefore ignored the RA returns for this function of government.

Data imputation

We then produced substitute numbers where we could. In *Education* we found four reliable sources of data, one each for the following four groups of SPROGs: higher education, further education, student support, and all other SPROGs (mostly related to education of people under 18). For higher education we used the Higher Education Funding Council for England's data on its allocations to higher education institutions. For further education we used Learning & Skills Council data supplied to our field researchers. For student support we used the Higher Education Statistics Agency's tables of students by institution, grouping the institutions by region. For all other SPROGs, we assumed that the schools expenditure reported by local education authorities via LGFS provided the correct regional pattern. This enabled us to reconstruct the entire spreadsheet for this function.

Over half of the expenditure on *Law, order, and protective services* is incurred by local authorities (principally police and fire authorities). Their expenditure is elaborately formula-driven, and should not be expected to result in anything close to EPC for the nine regions. We therefore derived the regional proportions of all expenditure for this function which did *not* appear on the RA spreadsheets, and applied the resulting proportions to the SPROGs for which we had no data. The underlying assumption is therefore that central government expenditure on this function (principally on prisons and the court service) tracks the pattern of local (police and fire) authority spending. Until the Home Office and what is now the Department for Constitutional Affairs can report direct data on prison and court services, this is the best substitute we can think of.[4] This enabled us to reconstruct the entire spreadsheet for this function. Details of our imputation methods for these two functions are in the Appendix, available on-line.

In *Health and personal social services* no action was required. In *Roads and transport*, we reassigned Bus Fuel Grant on an EPC basis for the eight regions other than London. In *Housing* no action was required. In *Other environmental services* the effort involved in reconstructing the spreadsheet supplied to us in July 2002 would have been disproportionate, given that our field researcher observed that much improved methods were already in force at the time of his visits.

-- Tables 2-3 about here --

In *Trade, industry, energy and employment* we have substituted the *inverse* of GDP per head for GDP per head where used. We do not pretend that this is perfect, but we think it is better than the original method. We have also reassigned the expenditure that was reported as EPC (unless it was for 'public good' expenditure, e.g., by regulators) on an inverse GDP basis. And we have made a minor change to a SPROG for the Coal Authority.

In *Agriculture, fisheries, food, and forestry* we imputed expenditure on *RPA – Direct payments under CAP* by the same method as used for DEFRA's other SPROGs, viz., *Regional Farm Income*. This resulted in a substantial reduction of expenditure reported for London and a substantial

[4] ODPM has pointed out that the police grant to London contains a component for expenditure on national-level public goods, such as protection of the Royal Family and of diplomats. A more refined model would take this into account.

increase in expenditure reported for East of England. Until DEFRA can report direct data on Common Agricultural Fund payments, this is the best substitute we have been able to think of.

In *Culture, media and sport* no action was practicable. No adjustments were required for *Social Security.* We reassigned expenditure on *Central administration and miscellaneous* on an EPC basis, as discussed above.

-- Tables 4-5 about here --

Table 2 shows identifiable expenditure, by region and function, 2000–01, as reported in Cm 5401/2002. Our cleaning and imputation operations enable us to present revised tables for identifiable expenditure, by region and function in Table 3. Tables 4 and 5 repeat the exercise on a per-head basis.

The Differences Measures Make

The net effect of changing from the originally presented data to our new estimates is concentrated in certain functional areas. This is shown in Table 6. Here we also can see that the consequences for regions vary across functions. In *Education*, we have substituted numbers that reflect the real regional distribution of universities, colleges of further education, and students. The effect is to show expenditure increased from that previously reported in the areas with the greatest density of these and reduced in the areas with the lowest density of these. Reported expenditure in London rises by £552 million (9.76%). Reported expenditure in East of England drops by £329 million (8.64%). These are the largest absolute changes that we propose.

-- Table 6 about here --

In *Roads and Transport* we have made a minor correction for Bus Fuel Grant. The effect is to show expenditure most increased in the largest region (South East – up by £17 million) and most reduced in the smallest region (North East – down by £16 million) compared to that previously reported.

In *Law, Order, and Protective Services* we have mapped central government spending to the same pattern as local government (mostly police authority) spending. The effect is to raise reported

expenditure most in London – by £443 million (13.22%) – and to reduce it most in East of England (down by £110 million or 7.09%) and South East (down by £140 million or 6.02%).

In *Trade, industry, energy, and employment* we have substituted inverse GDP for direct GDP as an imputation method. The effect is to raise reported expenditure most in the poorest regions (North East up by £56 million or 19.29%; North West up by £90 million or 12.33%; Yorks & Humber up by £55 million or 9.12%); and to reduce reported expenditure most in the richest regions (London down by £149 million or 18.21%; South East down by £ 102 million or 11.52%; East of England down by £64 million or 10.85%).

In *Agriculture, fisheries, food, and forestry* we have substituted an imputation by regional farm income (as used by DEFRA to impute spending for all of their subprogrammes except Common Agricultural Policy payments) to CAP payments. The effect is to raise reported expenditure in the regions with the highest farm income (East of England goes up by £ 253 million or 42.78%) and to reduce it in the regions with the lowest farm income (London goes down by £226 million or 93.96%; South East down by £131 million or 27.96%; North East down by £48 million or 41.89%; North West down by £121 million or 36.20%). These are the largest percentage changes that we propose.

The effect of changing *Central administration and miscellaneous* from an 'in' to a 'for' basis is to allocate it equally, at £48 per head for the year, to all nine regions.

The overall net effect is as shown in the last three lines of Table 4. Reported expenditure goes up most in London, where it increases by £489 million, or 1.31%. It also goes up in Yorkshire and Humberside. (Given the many assumptions we have had to make and the inevitable uncertainty of the numbers, the very small reported increases in North East, North West, and the Midlands should be regarded as 'no change'). Reported expenditure goes down most in the South East (by £336 million, or 1.04%) and East of England (by £248 million, or 1.10%).

While this project was in the field, the following year's RA exercise was in progress, and our field researchers watched it in real time, with the kind permission of their Departments. The Treasury invited Departments to re-enter their outturn data for years already returned in the spreadsheets we were given in July 2002. This includes our reference year of 2000–01.

The results were published in May 2003 as *PESA 2003,* Cm 5901. The Treasury and ONS issued a corrigendum in June 2003. In this corrigendum, the regional tables were again re-stated because the previous version had relied on population projections from the 1991 Census, which turned out to overstate the population in 2001. This threw out all the expenditure per head tables. The latest estimates of identifiable expenditure, by region and function, for 2000–01 are therefore in Table 7. The latest estimates of identifiable expenditure per head, by region and function, for 2000–01 are in Table 8. These tables are derived from the corrigendum to Cm 5901/2003 issued in June 2003.

There are at least three reasons why the reported numbers in Tables 7 and 8 differ from the numbers for the same year reported in Tables 2 and 3. One is the change from cash to resource budgeting. A second is the recalculation of population figures after the 2001 Census became available. A third is that Departments revised their returns.

-- Tables 7-8 about here --

Our recalculations of the figures presented in 2002 also use the new Census population relativities. That leaves the first (resource budgeting) and third (improving the data) explanations in contention. If Table 5 were closer to Table 3 than to Table 8, that would imply that most of the change from Table 3 to Table 8 is due to resource accounting changes. In fact, Table 5 appears closer to Table 8 than to Table 3, implying that Departments have been improving their data along (at least broadly) similar lines to our attempts, and have come up with broadly similar answers. We conclude that both sets of alternative figures present real improvements on the data originally presented, and that each may serve as a validity check on the other. It is possible that the very presence of our field researchers encouraged Departments to reflect more deeply on their data and its sources.

'In' and 'for'

The 'in' and 'for' distinction mentioned above was introduced in academic studies of public expenditure in the 1970s (Short 1978). Expenditure in region *j* may be defined as the expenditure for region *j* **minus** expenditure for but not in region *j* **plus** expenditure in but nor for region *j.* Expenditure for any of the English regions outside England is so trivial that we can ignore it without perceptible loss of data quality. The data required for a table of expenditure in the English regions therefore

comprise (a) net cross-regional-border transfers and (b) expenditure in but not for each of the nine regions.

Improving the present reporting process would enable some, but not all, transfers across regional borders to be calculated fairly cheaply. For example, expenditure on student support could be calculated for each region by domicile. This could be compared to the figures presented above which calculated student support for each region by location of the student's HEI. The difference between the two would be the net cross-border transfer in and out of each English region. Even this calculation is not as straightforward as it sounds, because of the need to incorporate both students domiciled in one of the devolved areas and studying in England, and students domiciled in England and studying in one of the devolved areas. Substantial improvement in the data would require substantial research.

-- Table 9 about here --

Expenditure in but not for each of the nine regions comes in three main categories: (a) HQ and similar central expenditure by departments that make RA returns; (b) expenditure in England by departments that make TA (Territorial Analysis) returns but do not make RA returns (e.g., the Scotland and Wales Offices); (c) expenditure in England by departments or for functions that are outside the RA/TA exercises. By far the largest of these expenditures is category (c). Table 9, which reproduces Table 8.8 from PESA 2003 (Cm 5901), shows that the largest three items within that are Defence; tax collection; and the science budget.

Conclusions and discussion

Policymakers need good English regional expenditure data for many reasons: to know whether regional formulas have the expected effects or not; to know where the demand for demand-driven programmes lies; to check whether regional policy has been implemented appropriately; to assess progress towards PSA targets; and, not least, to honour the 'National Statistics' badge of quality. As we have seen, however, the quality of the data is highly variable.

Our field research showed that departments that feel they have a mission related to regional policy have tended to keep data of high quality; departments whose mission has not involved a regional component have tended not to. There are other predictors of good data:

- Expenditure that goes to postcoded recipients who are the true final beneficiaries (example: benefit payments to individuals);
- Expenditure that flows through local, police, health, or fire authorities, and that is entered into official outturn statistics via the audited accounts of those bodies (example: expenditure on local authority schools)
- Expenditure determined by formula, when the formula relates directly to the English regions (example: formula funding of Regional Development Agencies).

Predictors of poor data include:

- Expenditure that goes to postcoded recipients who may not be the true final beneficiaries (example: payments to head offices of firms in respect of activities that may occur in other regions);
- Demand-led expenditure that goes neither to individuals nor to bodies with the standard regional boundaries (example: expenditure on the court system);
- Expenditure where it is clear *in* which region the money is spent, but unclear *for* which region it is spent (examples: expenditure on universities; the Channel Tunnel Rail Link).

Regardless of the specific causes, there are real problems with the extant data. This has real—and obvious—consequences as well. Three UK government departments share a PSA target to "make sustainable improvement in the economic performance of all English regions and over the long term reduce the persistent gap in growth rates between the regions…". The first report of an independent review sponsored by HM Treasury of the adequacy of statistics for economic policymaking points out that progress towards this target cannot be measured without adequate regional figures for government final consumption, which in turn requires the issues raised in this paper to be addressed (Allsopp 2003, 5.79-5.81 and Box 5.5). There are both efficiency and equity reasons to require good

data on regional public expenditure flows. The UK government will have to pursue this if it is to measure progress against its own targets.

Appendix: Selected Data Cleaning Reports

I. Education.

Method

We took the RA spreadsheets compiled in winter 2001/2 and supplied to us in July 2002, for financial year 2000–01, for the Department for Education and Skills. DfES is the only department whose return is coded for the *Education* function of government. The return for OFSTED is, unusually, made via DfES. Most regulators report independently to the Treasury in the RA exercise.

We identified the largest SPROGs, viz., those accounting for the first 80% of the expenditure for the function. SPROGs are reported in the spreadsheet in descending order of size. The RA return for Education is so skewed that the just the first three SPROGs out of the 40 lines in the spreadsheet account cumulatively for 80.8% of the total expenditure reported. They are: *Grant to the Higher education funding council* (40.4% of expenditure on the spreadsheet); *Further Education Funding Council* (33.6%); and *student loans* (6.8%).

We found that none of these SPROGs, nor indeed any DfES SPROG, was apportioned using real data. From inspection, it was evident that all SPROGs had been apportioned by population, i.e., equal spend per capita (EPC) throughout England. Every SPROG cell entry in the North-East column contained the Excel formula =SUM(F*x**5.15)/100, where F*x* denotes the cell containing the England total expenditure for row *x*, and 5.15/100 was the North-East proportion of the population of England in 2000/01. Likewise, each SPROG cell entry in the North-West column contained the Excel formula =SUM(F*x**13.79)/100, where as before F*x* denotes the cell containing the England total expenditure for row *x*, and 13.79/100 was the North-West proportion of the population of England in 2000/01.

The same pattern was repeated for the seven other English regions. Thus the entire area of the spreadsheet – 40 rows × nine columns, to a total of 360 cells – was populated by a single formula. This is a routine clerical operation that could have been performed by any official familiar with the rudiments of Excel, but it conveys no information about the regional breakdown of the department's expenditure.

In the analysis column to the right of the spreadsheet, the Department confirmed that data for some of its SPROGs, including the three biggest, was apportioned by population. It confirmed to our field researchers that data for every one of its SPROGs was in fact apportioned in this way.We concluded that the entire spreadsheet return by DfES contained no real information, and had to be discarded as a first step in data cleaning. We then compared the RA spreadsheet with the published tables for this year in Cm 5401 (PESA 2002–03, May 2002), and Cm 5901 (PESA 2003, May 2003): Table 8.12a in both cases.

Only about 30% of the total for the function *Education* in the published PESA tables derives from the RA spreadsheets. The rest comprises funds spent by English local authorities on schools and other educational functions. Expenditure by local authorities reaches the PESA tables via their audited accounts and the Local Government Financial Statistics (LGFS) database at ODPM. We consider these data to be accurate.

By far the majority of the DfES expenditure that does *not* flow through local authorities is spending on further and higher education. The three top SPROGs listed above all relate to further and higher education. The top twenty SPROGs in the table account for 98.9% of DfES reported expenditure. Of this total, only 6.2% was for any purpose other than either higher or further education. The largest single SPROG that is not for HE or FE is for the *Under Fives Voucher Scheme*, accounting for 1.3% of the expenditure reported in the spreadsheet.

Clearly, therefore, if a method, or methods, for apportioning expenditure on higher and further education can be devised, most of the problems identified in this report can be solved. However, these methods may have to be different for different SPROGs. The three largest SPROGs are three cases in point. For higher education, the appropriate method of reporting is not immediately obvious. For a full discussion of this issue, see the Education section of our main report, and the section on 'In and For' below.

However, a good approximation to the true outturn on the SPROG *Grant to the Higher education funding council* (HEFCE) is HEFCE's own data on its allocations to higher education institutions. HEFCE supplied these data to our field researchers. We reassigned the regional expenditure on this SPROG in the same proportion as HEFCE reported its own expenditure. This is called imputation method A in the accompanying spreadsheet.

For further education expenditure, issues of 'in and for' are much less acute. Expenditure on FE colleges may be regarded as both 'for' and 'in' the regions in which they are located. DfES supplied our field researchers with the actual regional proportions of expenditure on the SPROG *Further Education Funding Council* (FEFC – now superseded by Learning & Skills Council(s), LSC). We applied them to this SPROG, and to the other further education SPROGs. This is called imputation method B in the accompanying spreadsheet.

Expenditure on HE students, e.g., in the SPROG *Student loans*, may in principle be assigned either to their region of domicile or to the region of their institution. Data on both exist in the annual publication *Students in Higher Education Institutions 20xx–xx* (Cheltenham: Higher Education Statistics Agency). Reporting the data by domicile is closer to a 'For' method of imputation. Reporting the data by location of institution is closer to an 'In' method of imputation. It happens that the table reporting student numbers by institution is downloadable from http://www.hesa.ac.uk/holisdocs/pubinfo/student/Institution01.htm. The table reporting student numbers by domicile is apparently not available on line. For reasons of convenience therefore we coded the data by institution.

The HESA source does not give the GO region of each higher education institution (HEI). We coded these manually, assigning multicampus institutions to the region of their main campus (e.g., De Montfort University to East Midlands; the Open University to South East. In fact, the Open University draws its students from all over the UK; the students do not necessarily visit the South East region; a more refined version of the analysis should secure direct data from the Open University).

We then derived the proportion of UK undergraduates in each English region to the total number of UK undergraduates in England, in 2000–01, from the HESA tables. The resulting proportions comprise imputation method C in the accompanying spreadsheet. We compared the regional totals in the RA spreadsheet with the total expenditure for the function *Education* reported in *PESA 2002–3* – Cm 5401. This is the edition of PESA that is derived from the RA spreadsheet that we analysed. By subtraction, we derived the education expenditure sourced from LGFS by region. The resulting proportions comprise imputation method D in the accompanying spreadsheet.

We then assigned every SPROG in the RA spreadsheet to one of these four imputation methods. All SPROGs relating to higher education institutions were imputed by method A. All SPROGs relating to further education institutions were imputed by method B. All SPROGs relating to HE students were imputed by method C. All other SPROGs were imputed by method D. This methodology enabled us to recalculate the entire RA spreadsheet for *Education* for 2000–01.

Results

By reporting all SPROGs as if they were apportioned on an EPC basis, the RA return exaggerated expenditure in regions with below average expenditure per head on educational programmes other than schools, and under-reported it in regions with above average expenditure per head on educational programmes other than schools.

Table A1 shows the regional proportions used in each of the four methods of imputation, and the regional proportions of the English population as used by DfES in its return.

Table A1. Regional expenditure percentages for each of the four imputation methods

Method	Applies to	NE, %	NW, %	YH, %	EM, %	WM, %	SW, %	EE, %	L, %	SE, %
A	HEIs	5.3	12.1	10.2	8.2	8.4	7.4	7.5	24.3	16.6
B	FEIs	6.3	16.1	10.1	7.8	12.8	9.3	8.2	15.8	13.6

C	Students in HE	5.3	12.8	10.7	8.3	9.5	7.5	6.3	16.4	23.3
D	All other SPROGs	5.4	14.6	10.6	8.1	11.2	9.1	10.4	16.1	14.6
	(Population share)	5.2	13.8	10.1	8.4	10.7	10.0	10.9	14.8	16.2

HEI expenditure (Method A) is disproportionately lumped in London. It is below population proportions in North-West, West Midlands, East Midlands, and East of England. FEI expenditure (Method B) is closer to population proportions than HEI expenditure, but is above population share in North-east, North-west, West Midlands and London, and below in East Midlands, South West, and East of England.

Expenditure on students by institution (Method C) is most above population share in South East, and next most in London. It is furthest below population share in East of England. As expected, Method C roughly tracks Method A. However, the ranking is not the same. London and the South-east both do well, but in a different order. The difference could be because HEIs in London are relatively heavy in graduate students and research, while HEIs in the South-East are relatively large.

Expenditure derived from LGFS (Method D) has a slight weighting towards the poorer regions (except South West) and towards London. It has a weighting away from the more prosperous regions and away from South West.

II. Law, order, and protective services

Method

We took the RA spreadsheets compiled in winter 2001/2 and supplied to us in July 2002, for financial year 2000–01, for the Departments and agencies coded for this function of government. Those Departments and agencies were (for the 2000–01 return) the Crown Prosecution Service; the Serious Fraud Office; the Home Office; the Lord Chancellors Department; part of the Department of Transport, Local Government and the Regions; and HM Procurator General and Treasury Solicitor.

We initially identifed the largest SPROGs, viz., those accounting for the first 80% of the expenditure for the function. SPROGs are reported in the spreadsheets in descending order of size. We merged the spreadsheets for all the Departments etc coded for this function.

The following nine SPROGs accounted for 80.2% of the expenditure reported on the RA returns:

SPROG	Department	Propn of total reported via RA returns
Prison Operations (Public Sector)	HO	0.206982
Immigration and Nationality	HO	0.165069
Legal Aid: Criminal (was Legal aid (non administration))	LCD	0.13302
Community Legal Service	LCD	0.117689
Criminal Policy and Programmes	HO	0.059047
Law Officers Administration + Costs from Central Funds (two SPROGs)	CPS	0.052117
PRISONS: OPERATIONS (CONTRACTED-OUT)	HO	0.03925
Police	HO	0.037905

The practice of the departments concerned varied. The CPS did not provide breakdowns of its two SPROGs individually, but told our field researcher that its reported regional totals were based on actual expenditure in each region and were therefore accurate at least on an 'in' basis.

In neither the HO nor the LCD did the nominated representatives for this project have much knowledge of the RA process, but both reported that they believed that their SPROGs were apportioned according to population. Examination of the formulae in the cells of the RA spreadsheet confirms this. Therefore all of the top nine SPROGs except the two CPS ones are reported as if expenditure was on an equal per capita (EPC) basis for all nine English regions.

This is very unlikely to be correct. The LCD told our field researcher that: *It was felt that the raison d'etre behind the regional breakdown does not apply to law and order. Spending in the regions is demand-led, rather than allocation-led.* Crudely, the more crimes, and/or the more civil litigation which triggers LCD expenditure, per head in a region, the higher will be that region's expenditure per head on the LCD SPROGs. As LCD itself has no regional information, and as its SPROGs are not formula-driven, we conclude that the RA process gives no indication at all of the regional incidence of LCD expenditure.

Home Office Prison Service expenditure should be easily calculable on an 'in' basis, as the Prison Service knows where its prisons are and (presumably) how much each costs to run. This information did not reach our field researcher, however, and it should be the subject of a separate inquiry. Accounting for prison expenditure on a 'for' basis may be more difficult, as we have no information on inter-regional flows of prisoners. The best surrogate is probably the regional incidence of crime.

Home Office Immigration and Nationality expenditure could likewise be calculated on an 'in' basis as the Home Office knows where its staff and establishments are. On a 'for' basis, one possible method of imputation would be by the regional proportions of immigrants, applicants for naturalisation, and asylum seekers. However, we do not have these data, and they are partly endogenous as asylum seekers may be assigned to regions by virtue of Home Office decisions. The best surrogate is therefore EPC, equal per capita, on the justification that expenditure on immigration and nationality programmes is equally for the benefit of all citizens of England.

Home Office police expenditure, on the other hand, is extensively formula-driven. So is expenditure on the fire service, which in 2000–01 was routed through the then DTLR, now ODPM. Most police and fire expenditure is routed through local (including police and fire) authorities, and therefore reaches the PESA tables via the Local Government Financial Statistics (LGFS) database at ODPM, and not via the RA tables. The SPROG 'police' shown above relates only to central Home Office costs for police and is a trivially small proportion of public expenditure on policing.

Neither police nor fire expenditure should be expected to be anything like equal per capita (EPC) in each region.

By way of illustration, here is the police funding formula for 2003–04: The full formula used to calculate the *Police* element is:

(a) **DAYTIME POPULATION** *multiplied by* the result of:
POLICE BASIC AMOUNT 1; *plus*
POLICE DEPRIVATION TOP-UP 1; *plus*
POLICE DENSITY TOP-UP 1;
(b) **RESIDENT POPULATION** *multiplied by* the result of:
POLICE BASIC AMOUNT 2; *plus*
POLICE DEPRIVATION TOP-UP 2; *plus*
POLICE DENSITY TOP-UP 2; *plus*
POLICE SPARSITY TOP-UP;
(c) The sum of:
£1,302.12 *multiplied by* **BUILT-UP ROAD LENGTHS**; *plus*
£13,041.16 *multiplied by* **MOTORWAY LENGTHS**;
(d) The results of (a) to (c) inclusive are added together and the result is *multiplied by* **AREA COST ADJUSTMENT FOR POLICE**;
(e) The result of (d) is then added to the sum of **SECURITY EXPENDITURE** and **POLICE**

PENSIONS;
(f) The result of (e) is then *multiplied by* the result of 1 *minus* **POLICE GRANT RATE**;
(g) The result of (f) is then *multiplied by* the scaling factor given in Annex F for the Police service block.

Source: ODPM, *Draft Local Government Finance Report 2003/04*, section 4 *The Calculation of Formula Spending Shares* at http://www.local.dtlr.gov.uk/finance/0304/lgfr/s4.pdf).

Clearly, this should not be expected to deliver EPC funding to each region. Within this formula, individual elements are likely to deliver highly unequal amounts per head: especially *Area Cost Adjustment* and, within *Police deprivation Top-up I* an element of "£114.91 *multiplied by* YOUNG MALE UNEMPLOYMENT-RELATED BENEFIT CLAIMANTS".

For fire, the formulae (viewable in the succeding chapter of http://www.local.dtlr.gov.uk/finance/0304/lgfr/s4.pdf) diverge less than for police from EPC, but are certainly not EPC, if only because of Area Cost Adjustment. The formulae in use in 2000–01 were not the same as the above but were broadly similar.

We concluded that almost the entire spreadsheet return by the six departments contributing to this function of government contained no real information, and had to be discarded as a first step in data cleaning. The exceptions are listed in Table A2. The SPROGs listed there either contained real data, or were for functions where equal spending per capita is a reasonable surrogate for the expenditure 'For' each region of England.

Table A2. SPROGs retained from the RA spreadsheets for *Law, Order & Protective Services*, 2000–01

SPROG Description	Department	England total, £m	Reason for retention
Immigration and Nationality	HO	1,029.6	EPC is a reasonable imputation
CPS SPROGs	CPS	329.3	Real data
Law Officers Administration (SFO)	SFO	8.4	Real data
COSTS FROM CENTRAL FUNDS (SFO)	SFO	7.1	Real data
GLA Preparation Costs	DTLR	4.3	All assigned to London – only London benefits
GLA Election Costs	DTLR	3.8	All assigned to London – only London benefits
Costs from central funds - running costs (SFO)	SFO	3.2	Real data

Of the small departments contributing to the data, the CPS supplied real data, as reported above. The Serious Fraud Office reported on the spreadsheet that it had apportioned its expenditure pro rata to 'Police Forces involved in SFO cases'. The department explained to our field researcher that it had assigned half of its expenditure to London because about half of its caseload either originated or was investigated in London. This seems a reasonable imputation and we have retained its SPROGs as reported.

The Treasury Solicitor's department reported that all its expenditure takes place in London. It did not report regional breakdowns for its individual SPROGs but did report its overall spending as being proportionate to population. Given that its operations are equally 'for' all citizens of the UK (and it should probably have been included under 'Central Administration' rather than under this function of government), we think that that is a reasonable apportionment. But the department is so small in relation to this function of government that it would be excessively laborious to single it out, reconstruct its expenditure SPROG by SPROG, and assign it on an EPC basis.

We compared the RA spreadsheet with the published tables for this year in Cm 5401 (PESA 2002–03, May 2002), and Cm 5901 (PESA 2003, May 2003): Table 8.12a in both cases. Only about 39% of the total for the function *Law, order, and protective services* in the published PESA tables derives from the RA spreadsheets. The rest comprises funds spent by English local authorities, fire authorities, and police authorities.

Expenditure by these authorities reaches the PESA tables via their audited accounts and the Local Government Financial Statistics (LGFS) database at ODPM. We consider these data to be accurate. We therefore imputed the regional expenditure derived from LGFS by subtracting the regional totals reported in the RA spreadsheets from the regional totals reported in Cm 5401, which is the edition of PESA derived from these spreadsheets. The remainder represents the regional expenditure derived from LGFS.

We measured each region's proportion of the total LGFS-derived expenditure. It varied substantially from the regions' population shares (Table A3). London received much more than its population proportion of this expenditure. The North East and North West regions each received a little more than their population shares. All other regions received less than their population shares.

Table A3. Regional proportions of the English population, and regional proportions of expenditure by fire, police, and local authorities on *Law, Order & Protective Services*, 2000–01

	NE	NW	YH	EM	WM	SW	EE	L	SE
Proportion of population	0.05 15	0.1379	0.10 12	0.08 42	0.10 67	0.09 95	0.10 92	0.14 75	0.16 23
Proportion of LGFS expenditure	0.05 33	0.1442	0.09 57	0.06 89	0.09 56	0.08 36	0.08 73	0.23 87	0.13 26

This distribution is consistent with the pattern implied by the formula grants reviewed above. London gets by far the most benefit from Area Cost Adjustment. London and the poor regions of England can expect to benefit relatively from the deprivation weightings.

We therefore recalculated the RA data by stripping out all the unreliable SPROGs and recalculating them on the basis that expenditure on them matched the pattern of local, police, and fire authority expenditure on law, order, and protective services. This methodology enabled us to recalculate the entire RA spreadsheet for *Law, order, and protective services* for 2000–01.

References

[NB. All Web links were tested and found to be live in December 2003.]

Allsopp, C. (2003). *Review of Statistics for Economic Policymaking: First Report to the Chancellor of the Exchequer, the Governor of the Bank of England and the National Statistician.* Norwich: TSO. At http://www.hm-treasury.gov.uk/consultations_and_legislation/allsop_review/consult_allsopp_index.cfm

Department of Transport, Local Government & the regions (2002). *Your Region, Your Choice: revitalising the English regions* Cm 5511. Norwich: TSO.

HM Treasury. 2001. *Public Expenditure Statistical Analyses 2001–02.* Cm 5101. London: The Stationery Office. http://www.archive.official-documents.co.uk/document/hmt/5101/5101-00.htm

HM Treasury. 2002a. *Funding the Scottish Parliament, National Assembly for Wales, and Northern Ireland Assembly* 3rd edn. London: HMT. Available on the Web at http://www.hm-treasury.gov.uk/media//5A6F9/funding_devolved.pdf or via http://www.hm-treasury.gov.uk /fundingguidance.

HM Treasury. 2002b. *Public Expenditure Statistical Analyses 2002–03.* Cm 5401. London: The Stationery Office

HM Treasury. 2003. *Public Expenditure Statistical Analyses 2003.* Cm 5901. London: The Stationery Office.

McLean, I. and A. McMillan. 2003. 'The distribution of public expenditure across the UK regions.' *Fiscal Studies* 24:45-71.

McLean, I. et al. 2003. *Identifying the Flow of Domestic and European Expenditure into the English Regions*. Report to the Office of the Deputy Prime Minister. http://www.nuff.ox.ac.uk/ projects/odpm/

ONS (Office for National Statistics). 2002. *National Statistics: Code of Practice*. London: ONS. http://www.statistics.gov.uk/about_ns/cop/downloads/StatementRD.pdf

Short J. 1978. 'The regional distribution of public expenditure in Great Britain, 1969/70 – 1973/74', *Regional Studies*, 12: 499–510.

Table 1. Reliable and unreliable numbers for 2000–01 in PESA 2002–03, Cm 5401

1	£ per head, England 2	£m, England 3	£m, excl LGFS 4	Proportion LGFS 5	Proportion reliable central govt 6	Total proportion reliable 7
Education	719	35966	12663	0.65	0.00	0.65
Health and pss	1,132	56,583	46399	0.18	0.00	0.18
Roads and transport	148	7380	3980	0.46	0.49	0.95
Housing	48	2413	-413	1.17	n/a	1.00
Other environmental services	151	7563	3710	0.51	0.00	0.51
Law, order and protective services	326	16281	8023	0.51	0.14	0.65
Trade, industry, energy and employment	110	5491	5491	0.00	0.00	0.00
Agriculture, fisheries, food and forestry	66	3310	3262	0.01	0.47	0.48
Culture, Media and Sport	90	4514	2458	0.46	0.54	1.00
Social Security	1,692	84,577	78820	0.07	0.93	1.00
Central admin. and miscellaneous	47	2368	2368	0.00	0.00	0.00
Total	4,529	226,446	166761			
Overall weighted average						0.646
wted ave of non-LGFS spend						0.511

Table 2. Identifiable expenditure, by region and function, 2000–01

	Allocation of expenditure by region cash £ million									
	North East	North West	Yorkshire and Humberside	East Midlands	West Midlands	South West	Eastern	London	South East	Total England
Education	1922	5152	3752	2944	3968	3355	3802	5653	5418	35,966
Health and personal social services	3083	8200	5759	4309	5747	5376	5536	10206	8367	56,583
Roads and transport	444	882	597	594	677	740	866	1396	1183	7,379
Housing	130	467	244	108	113	103	60	1140	49	2,414
Other environmental services	512	1258	781	595	768	679	650	1262	1058	7,563
Law, order and protective services	852	2329	1588	1197	1631	1456	1553	3351	2324	16,281
Trade, industry, energy and employment	291	730	607	457	595	516	593	820	882	5,491
Agriculture, fisheries, food and forestry	114	334	437	383	385	356	591	241	469	3,310
Culture, Media and Sport	282	524	733	302	497	418	417	755	585	4,513
Social security	5480	13510	8923	6934	9361	8246	8286	12067	11769	84,576
Central admin and misc	158	315	196	186	217	208	258	476	353	2,367
Total	**13268**	**33701**	**23617**	**18009**	**23959**	**21453**	**22612**	**37367**	**32457**	**226,443**
Proportion	0.059	0.149	0.104	0.080	0.106	0.095	0.100	0.165	0.143	
EPC proportion	0.051	0.137	0.101	0.085	0.107	0.100	0.110	0.146	0.163	
Difference from EPC	1.145	1.087	1.032	0.937	0.987	0.945	0.911	1.131	0.880	

Source: PESA 2002–3 (Cm 5401/2002), Table 8.12a; our calculations. [nb totals differ from published table because of rounding]

Table 3. Identifiable expenditure per head, by region and function, 2000–01

	Allocation of expenditure by region £ per head									
	North East	North West	Yorkshire and Humberside	East Midlands	West Midlands	South West	Eastern	London	South East	Total England
Education	746	747	742	700	744	674	696	767	668	719
Health and personal social services	1196	1190	1139	1024	1077	1081	1014	1384	1031	1,132
Roads and transport	172	128	118	141	127	149	159	189	146	148
Housing	51	68	48	26	21	21	11	155	6	48
Other environmental services	199	182	154	141	144	136	119	171	130	151
Law, order and protective services	331	338	314	285	306	293	285	454	286	326
Trade, industry, energy and employment	113	106	120	109	111	104	109	111	109	110
Agriculture, fisheries, food and forestry	44	48	86	91	72	72	108	33	58	66
Culture, Media and Sport	109	76	145	72	93	84	76	102	72	90
Social security	2126	1960	1764	1648	1755	1658	1518	1636	1450	1,692
Central admin and misc	61	46	39	44	41	42	47	65	44	47
Total	**5148**	**4888**	**4669**	**4280**	**4491**	**4312**	**4142**	**5067**	**4000**	**4,529**

Source: Cm 5401/2002, Table 8.12b

Table 4. Revised identifiable expenditure, by region and function, 2000–01

	Allocation of expenditure by region cash £ million									
	North East	North West	Yorkshire and Humberside	East Midlands	West Midlands	South West	Eastern	London	South East	Total England
Education	***1975***	***5145***	***3763***	***2907***	***3924***	***3166***	***3473***	***6205***	***5406***	***35965***
Health and personal social services	3083	8200	5759	4309	5747	5376	5536	10206	8367	56583
Roads and transport	***428***	***891***	***595***	***587***	***677***	***738***	***867***	***1396***	***1200***	***7379***
Housing	130	467	244	108	113	103	60	1140	49	2414
Other environmental services	512	1258	781	595	768	679	650	1262	1058	7563
Law, order and protective services	***865***	***2354***	***1564***	***1133***	***1567***	***1376***	***1443***	***3794***	***2184***	***16281***
Trade, industry, energy and employment	***347***	***820***	***662***	***472***	***642***	***555***	***529***	***671***	***780***	***5478***
Agriculture, fisheries, food and forestry	***66***	***213***	***549***	***488***	***431***	***367***	***844***	***15***	***338***	***3310***
Culture, Media and Sport	282	524	733	302	497	418	417	755	585	4513
Social security	5480	13510	8923	6934	9361	8246	8286	12067	11769	84576
Central admin and misc	***121***	***324***	***239***	***201***	***254***	***238***	***260***	***346***	***386***	***2368***
Total	13290	33707	23813	18037	23981	21262	22364	37856	32121	226430
Total from Cm 5401	13268	33701	23617	18009	23959	21453	22612	37367	32457	226443
Difference from Cm 5401, £m	22	6	196	28	22	-191	-248	489	-336	-13
Difference from Cm 5401, proportion	0.002	0.000	0.008	0.002	0.001	-0.009	-0.011	0.013	-0.010	0

Note: Rows which have changed in ***bold italics***
Source: our calculations

Table 5. Revised Identifiable expenditure per head, by region and function, 2000–01

	Allocation of expenditure by region £ per head									
	North East	North West	Yorkshire and Humberside	East Midlands	West Midlands	South West	Eastern	London	South East	Total England
Education	785	764	758	696	745	642	644	863	675	731
Health and personal social services	1196	1190	1139	1024	1077	1081	1014	1384	1031	1132
Roads and transport	170	132	120	141	129	150	161	194	150	150
Housing	51	68	48	26	21	21	11	155	6	48
Other environmental services	199	182	154	141	144	136	119	171	130	151
Law, order and protective services	344	350	315	271	298	279	267	528	273	331
Trade, industry, energy and employment	138	122	133	113	122	112	98	93	97	111
Agriculture, fisheries, food and forestry	26	32	110	117	82	74	156	2	42	67
Culture, Media and Sport	109	76	145	72	93	84	76	102	72	90
Social security	2126	1960	1764	1648	1755	1658	1518	1636	1450	1692
Central admin and misc	48	48	48	48	48	48	48	48	48	48
Total	**5192**	**4924**	**4734**	**4298**	**4513**	**4285**	**4112**	**5177**	**3974**	**4552**
popn per 2001 Census, 000s	2517	6732	4967	4175	5267	4934	5395	7188	8007	49181

Sources: Our calculations; Census 2001

Table 6. Original and revised expenditure for 2000–01

		NE	NW	YH	EM	WM	SW	EE	L	SE	Comments
Education	Original	1922	5152	3752	2944	3968	3355	3802	5653	5418	
	Revised	1975	5145	3763	2907	3924	3166	3473	6205	5406	London up by most, East down by most, due to location of universities and students
	Difference, £m	53	-7	11	-37	-44	-189	-329	552	-12	
	% difference	2.78	-0.14	0.29	-1.26	-1.10	-5.62	-8.64	9.76	-0.23	
Roads & t	Original	444	882	597	594	677	740	866	1396	1183	
	Revised	428	891	595	587	677	738	867	1396	1200	NE (smallest region) down by most, SE (largest region) up by most after correcting Bus Fuel Grant
	Difference, £m	-16	9	-2	-7	0	-2	1	0	17	
	% difference	-3.68	1.05	-0.27	-1.12	0.01	-0.28	0.09	0.00	1.40	
LO&PS	Original	852	2329	1588	1197	1631	1456	1553	3351	2324	
	Revised	865	2354	1564	1133	1567	1376	1443	3794	2184	London up by most, EE and SE down by most, due to tracking police authority spending
	Difference, £m	13	25	-24	-64	-64	-80	-110	443	-140	
	% difference	1.53	1.08	-1.51	-5.32	-3.90	-5.47	-7.09	13.22	-6.02	
Trade etc	Original	291	730	607	457	595	516	593	820	882	
	Revised	347	820	662	472	642	555	529	671	780	NE up by most, London down by most, after substituting inverse GDP for direct GDP ratios as an imputation measure.
	Difference, £m	56	90	55	15	47	39	-64	-149	-102	
	% difference	19.29	12.33	9.12	3.25	7.84	7.55	-10.85	-18.21	-11.52	
Ag, fish etc	Original	114	334	437	383	385	356	591	241	469	
	Revised	66	213	549	488	431	367	844	15	338	East up by most, London down by most. Effect of alllocating CAF payments by regional farm income
	Difference, £m	-48	-121	112	105	46	11	253	-226	-131	
	% difference	-41.89	-36.20	25.57	27.45	11.91	3.02	42.78	-93.96	-27.96	

Central adm etc	Original	158	315	196	186	217	208	258	476	353	NE and London down by most, WM and SW up by most. Effect of substituting 'for' for 'in'.
	Revised	121	324	239	201	254	238	260	346	386	
	Difference, £m	-37	9	43	15	37	30	2	-130	33	
	% difference	-23.28	2.95	22.07	8.10	16.97	14.18	0.64	-27.39	9.22	

Table 7. Identifiable expenditure, by region and function, 2000–01 as reported in PESA 2003, Cm 5901, Table 8.12a (revised June 2003)

	Allocation of expenditure by region cash £ million									
	North East	North West	Yorkshire and Humberside	East Midlands	West Midlands	South West	Eastern	London	South East	Total England
Education	1,905	5,129	3,725	2,934	3,943	3,341	3,777	5,622	5,406	35,781
Health and personal social services	2,960	7,873	5,516	4,102	5,490	5,128	5,262	9,873	7,967	54,171
Roads and transport	446	853	587	578	660	701	846	1,671	1,153	7,497
Housing	21	277	156	71	107	115	65	1,122	90	2,025
Other environmental services	503	1,231	874	664	785	713	772	1,247	1,112	7,900
Law, order and protective services	881	2,336	1,593	1,212	1,612	1,462	1,586	3,334	2,347	16,363
Trade, industry, energy and employment	547	1,060	672	403	608	478	484	786	795	5,833
Agriculture, fisheries, food and forestry	86	286	558	390	371	254	670	202	363	3,180
Culture, Media and Sport	290	565	729	289	483	406	393	747	561	4,463
Social security	5,410	13,368	8,826	6,856	9,280	8,156	8,224	12,001	11,668	83,789
Central admin and misc	148	317	203	168	209	187	217	485	314	2,248
Total	13,198	33,294	23,437	17,666	23,549	20,941	22,298	37,091	31,776	223,249

Table 8. Identifiable expenditure per head, by region and function, 2000–01 as reported in PESA 2003, Cm 5901 Table 8.12b (revised June 2003)

	Allocation of expenditure by region cash £ million									
	North East	North West	Yorkshire and Humberside	East Midlands	West Midlands	South West	Eastern	London	South East	Total England
Education	755	761	752	706	750	681	703	791	677	730
Health and personal social services	1173	1169	1114	987	1044	1045	979	1390	998	1,106
Roads and transport	177	127	119	139	126	143	157	235	144	153
Housing	8	41	31	17	20	24	12	158	11	41
Other environmental services	199	183	177	160	149	145	144	176	139	161
Law, order and protective services	349	347	322	292	306	298	295	469	294	334
Trade, industry, energy and employment	217	157	136	97	116	97	90	111	100	119
Agriculture, fisheries, food and forestry	34	42	113	94	71	52	125	28	45	65
Culture, Media and Sport	115	84	147	69	92	83	73	105	70	91
Social security	2144	1984	1783	1649	1764	1661	1530	1689	1462	1,710
Central admin and misc	59	47	41	40	40	38	40	68	39	46
Total	5232	4942	4735	4249	4477	4266	4148	5221	3981	4,556

Table 9. Non-identifiable expenditure by programme, 2000–2001

Programme	Resources, £m
Defence and overseas services	28,983
BSE related expenditure	121
Science and technology	2,077
BNFL	518
Net medical payments to European Economic Area countries*	206
Records, registrations and surveys	42
War pensions and pensions paid to UK nationals abroad	2,758
Net payments to EC institutions	3,697
Cabinet Office	206
Parliament and associated expenditure	352
Office for National Statistics	146
Tax collection and funding for Bank of England	6,974
Civil service superannuation	68
Security and intelligence services	760
Smaller programmes	262
Total	**47,170**

* Mainly fees for the treatment of UK Nationals abroad.

Source: PESA 2003 (Cm 5901). These figures differ considerably from those reported a year earlier for 2000–01 in Cm 5401. For instance, the line for 'tax collection…' has almost doubled from that previously reported. The differences between the two tables may be attributable to the introduction of resource budgeting.

Glossary

CAP	Common Agricultural Policy
DEFRA	Department for Environment, Food and Rural Affairs
DfT	Department for Transport
DTI	Department of Trade and Industry
DTLR	Department for Transport, Local Government and the Regions
EPC	Equal per capita [expenditure]
GDP	Gross domestic product
HEI	Higher education institution
HMT	Her Majesty's Treasury
LA	Local authority
LGFS	*Local Government Financial Statistics*
NDPB	Non-departmental public body
ODPM	Office of the Deputy Prime Minister
ONS	Office for National Statistics
PESA	Public Expenditure Statistical Analysis/es
RA	Regional Analysis
SPROG	Sub-programme
TA	Territorial Analysis
TME	Total managed expenditure