Reform of the Barnett Formula with needs assessment: can the challenges be overcome?

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Abstract. Block grants to the UK’s devolved administrations (DAs) are allocated using the Barnett formula. There have been widespread calls to replace this formula with one based on some form of spending needs assessment, but two major objections to doing so have been put forward. This paper explores these objections. First, it explores the argument that the DAs would be unable to agree on how need should be assessed, by comparing the Scottish and English formulae that are used for allocating funding for health and education within each country. Second, it explores how needs assessment could work for DAs which pursue significantly different public spending policies. It concludes that these arguments against replacing the Barnett formula with grants based on spending need are much weaker than some commentators argue.

JEL codes: H71, H72, H75, H77, R50

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1. INTRODUCTION
The UK’s devolved administrations (DAs) have almost complete autonomy to determine policy and spending decisions for devolved areas of policy – which include health, education, local government, environment, housing and transport. To finance this spending they rely almost entirely on a block grant from the UK Government.

The block grant is determined by the Barnett Formula. This formula – which was introduced in 1979 on the assumption that it would be a temporary measure – has been criticised for two main reasons:

- It makes no attempt to assess the spending needs of the DAs and is therefore seen as inequitable (MCLEAN, LODGE and SCHMUECKER, 2008; SELECT COMMITTEE ON THE BARNETT FORMULA, 2009; INDEPENDENT COMMISSION ON FUNDING AND FINANCE FOR WALES, 2010).
- It bases the grant allocations to the DAs on English policy decisions. This seems increasingly unsatisfactory now the DAs are pursuing different policies (TRENCH, 2012).

The arrangements for funding the UK’s devolved administrations are evolving, with a focus on giving the DAs greater revenue raising autonomy. The move towards greater fiscal autonomy for the DAs is driven by a desire to reduce their vertical fiscal imbalance, and to improve their accountability and political decision making efficiency. These reforms will reduce DA reliance on block grants, but block grants will remain the main source of revenue for the devolved governments for the foreseeable future.

This paper considers the advantages and disadvantages of allocating grants to the DAs using the existing Barnett approach, compared to simply allocating grants on an equal per capita basis, or using some form of spending needs assessment. Having considered the various forms that a spending needs assessment might take, the paper uses original analysis to assess two of the major arguments that have often been made against replacing the Barnett Formula by needs assessment:

- First, that the normative dimension of needs means that it will be impossible for the DAs to agree on a needs assessment formula;
- Second, that needs assessment is unworkable in the context of devolved governments that have autonomy to pursue their own policies.

Our findings draw on a detailed analysis undertaken from 2011-2013 as part of an ESRC funded project to look at options for replacing the Barnett Formula. This analysis had several components:

- A detailed comparison of the spending needs formulae used to allocate resources for education and health within England by the Westminster Government with the formulae used to allocate resources for education and health within Scotland by the Holyrood government.
- Consideration of devolved government funding arrangements in several other relevant countries.
- Interviews with high profile UK-based policy makers.
- Three citizens’ juries with residents of England, Scotland and Wales.
The remainder of the paper is structured as follows. Section 2 describes the current arrangements for funding the UK’s DAs (including the strengths and weaknesses of the Barnett Formula), and the way in which these arrangements are evolving. Section 3 outlines in broad terms the options for replacing the Barnett Formula, illustrated by reference to arrangements in a number of other countries.

The subsequent two sections consider in further detail two of the key challenges likely to be faced in replacing the Barnett Formula by needs assessment. Section 4 considers the extent to which the UK territories are likely to be able to reach agreement on how needs should be assessed, given the normative dimension of what constitutes need. Section 5 addresses a related issue, which is how needs assessment can be operationalized in the context of devolved governments that can potentially make quite different public spending plans. Section 6 concludes.

2. FUNDING THE UK TERRITORIES: CURRENT ARRANGEMENTS AND PROPOSED CHANGES

The devolved administrations (DAs) in the UK’s three devolved territories, Scotland, Wales and Northern Ireland (NI) rely on a block grant from the UK government to finance the majority of their spending. Since 1979, this block grant (or more precisely, the annual change in the block grant) has been determined by the Barnett Formula.

The Barnett Formula determines the change to each DAs’ grant based on changes in spending on comparable (i.e. devolved) services in England, and the population share of each DA (HM TREASURY, 2010). For example, if the UK government announces a £100m increase in health spending in England, if 99% of all UK health spending is devolved, and if Scotland’s population is 10% of England’s, then the Scottish Government would see an increase in its budget of £9.9 million. The Barnett-calculated change is added to the existing grant (the baseline). It follows that the territories’ absolute level of grant is a function of the baseline grant that the territory received in 1979, and all subsequent applications of the Barnett formula.

This approach to allocating grant to the devolved territories has been criticised on the grounds that it takes no account of the spending needs of the territories relative to each other or England. The block grant allocations have often been accused of being too generous to Scotland and NI, but less so to Wales (MCLEAN and MCMILLAN, 2005; MACKAY and WILLIAMS, 2005). The Barnett Formula bears the brunt of this criticism, but in fact the allocations to the devolved territories are as much the result of generous initial per capita grant allocations (i.e. baseline) when the formula was introduced, as they are to do with the formula itself.

A second criticism is increasingly being levied at the Barnett Formula. This is that the formula bases the change in the block grant to the DAs on changes in spending by government departments in England. This was less of an issue pre-1997, when policy was largely determined at a UK level. Since the significant devolution of the late 1990s however, there is increasingly scope for policy divergence between the territories. There are now significant differences in the management of the National Health Services across the UK (GREER, 2004), as well as in both schools policy and the funding of university education. Given such divergence across major policy programmes, the notion of basing grant to a devolved government on the policy decisions of another parliament seems
somewhat at odds with the aims of devolution, and in effect forces the DAs to become ‘policy takers’ (TRENCH, 2012).

Despite the criticisms levelled at the Barnett Formula, it has remained the preferred mechanism for allocating grant to the UK territories since 1979. A number of explanations have been provided for the formula’s longevity:

- First, because the Barnett Formula applies only to the change in grant, it is stable and predictable, and this is valued by the DAs.
- Second, the Barnett Formula is valued by the Treasury because it is simple to apply, and does not require protracted negotiation with other governments.
- Third, the Barnett formula is characterised as part of a more nuanced ‘formula plus influence’ system of funding which has advantages for both the central and devolved governments (CHRISTIE and SWALES, 2010), and which represents the ‘codeification of a bargaining outcome’ (SMITH, 2006). Simply put, this argument asserts that the relatively generous allocations to the devolved administrations reflects the territories’ bargaining power, due to a combination of the threat to secede from the Union and their geographical and political distance from the centre (MCLEAN and MCMILLAN, 2005; CHRISTIE and SWALES, 2010; HALLWOOD and MACDONALD, 2009).

However, the Barnett Formula’s advantages are increasingly outweighed by its disadvantages, and as a result there are growing calls for the Barnett Formula approach to determining the block grant to be replaced by an alternative. The Holtham Commission (INDEPENDENT COMMISSION ON FUNDING AND FINANCE FOR WALES, 2010) and the House of Lords Select Committee on the Barnett Formula (2009) both recommended that the Barnett Formula should be replaced by a needs based spending assessment.

Since the publication of the Holtham and House of Lords reports, the debate around the financing of the UK’s DAs has evolved rapidly. The Scotland Act 2012 confers on the Scottish Government some powers to raise revenue from income tax and a number of smaller taxes, equivalent in revenue terms to around one third of its budget. The Commission on Devolution in Wales (COMMISSION ON DEVOLUTION IN WALES, 2012) has recommended that similar tax raising powers be conferred on the Welsh Government, and there are ongoing investigations into the possibility of devolving Corporation Tax to NI (HM TREASURY, 2011).

These arrangements will clearly reduce the level of vertical fiscal imbalance faced by the devolved governments, and by implication require the level of resources they receive from the block grant to be reduced. Yet the block grant will remain the main source of revenue for the devolved governments – and thus the arguments for reform of the Barnett Formula remain valid.

3. OPTIONS FOR REPLACEMENT OF THE BARNETT FORMULA

One simple alternative to the Barnett Formula would be to allocate grant to the DAs on an equal per capita basis. This would be procedurally transparent, and provide a predictable and stable level of grant. Once taxes are devolved to the DAs, the approach could be adapted to allow for the
differential tax revenue receipts of each UK territory. This would mean that each UK territory had
equal revenues per head, but no allowance would be made for differential spending needs.

Canada and Germany allocate grant to provinces and Länder respectively in such a way as to
equalise devolved tax revenues, whilst making almost no attempt to consider the spending needs of
provinces/Länder⁴. Implicitly, this approach is equivalent to allocating grant on an equal per capita
basis with respect to spending need. Canada, while enshrining revenue equalisation into its
Constitution, has repeatedly rejected the idea of equalising the spending needs of its provinces.
Lecours and Beland (2010) put this rejection down to the ‘inter-state’ nature of Canadian federalism,
where party affiliation is much less important than provincial interests and identities, and needs
assessment is seen as a threat to provincial autonomy.

Allocating resources to the UK’s DAs on an equal per capita basis would lead to a markedly different
pattern of spending from the current situation. In 2009/10, per capita spending on devolved services
was 32, 21%, and 12% higher in NI, Scotland, and Wales respectively than in England (HM TREASURY,
2012). Although the current allocations are not, as noted previously, based on an assessment of
spending need, there is a general recognition that the spending needs of the DAs are somewhat
higher than they are in England (INDEPENDENT COMMISSION ON FUNDING AND FINANCE FOR
WALES, 2010; MCLEAN and MCMILLAN, 2005; MACKAY and WILLIAMS, 2005; MIDWINTER, 2002).
Allocating grant on an equal per head basis is arguably at odds therefore with the notion of the UK
as a nation state with a sense of national solidarity. If one is persuaded by the argument that
transfers from richer to poorer regions are what ‘keeps the Kingdom united’(MACKAY and
WILLIAMS, 2005), then this would seem to favour an argument for distributing grants to the DAs
according to some assessment of their spending needs.

Needs assessment is used extensively within each of the UK territories to distribute resources to
health boards, local authorities, schools, and colleges (SMITH, 2006; NATIONAL AUDIT OFFICE,
2011). These needs assessment formulae typically attempt to build-up a detailed picture of spending
needs for individual service areas. The formulae are developed by analysing how the use of a given
service, or the costs of providing that service, vary according to factors such as the demographic and
socio-economic characteristics of the local population, and the costs of delivering public services in
different parts of the country. These needs assessment approaches are known as ‘bottom-up’
models because they seek to identify needs indicators, based on an underlying causal theory about
how they influence a particular element of service delivery.

Such ‘bottom-up’ needs assessment formulae continue to evolve in sophistication. The Department
for Health in England for example is investigating the use of ‘person-based resource accounting’
(NUFFIELD TRUST), whilst Bramley (BRAMLEY, WATKINS and KARLEY, 2011) develops an illustrative
‘outcome-based’ resource allocation framework with an application to Welsh schools. However,
many of the existing needs based allocation formulae have been criticised on methodological
grounds including circularity and ‘ecological fallacy’ (STONE and GALBRAITH, 2006; SMITH, 2003;
GALBRAITH and STONE, 2011), complexity, and a lack of transparency which leads to assertions that
the formulae are open to political manipulation (HILBER, LYYTIKÄINEN and VERMEULEN, 2011; JOHN
and WARD, 2001).

The Australian Government allocates grant to States using a detailed, bottom-up approach to
assessing States’ spending need across 14 categories of spending. The Australian system of needs
assessment is often cited as a system from which the UK could draw lessons (SELECT COMMITTEE ON THE BARNETT FORMULA, 2009; KAY, et al., 2005), although its critics point to its opacity – its latest methodological report runs to 700 pages (COMMONWEALTH GRANTS COMMISSION, 2010).

However, needs assessment does not have to be so complex. Two recent reports have argued that grant should be allocated to the UK DAs based on a simple ‘top-down’ assessment of their spending needs. In a top-down approach, a basket of indicators is used to explain overall expenditure need for a DA, but no attempt is made to link particular indicators to specific service blocks.

- The House of Lords Select Committee (SELECT COMMITTEE ON THE BARNETT FORMULA, 2009) argued in favour of replacing the Barnett Formula with a simple formula with around eight indicators of relative need. The Committee rejected more detailed approaches because these are seen as overly prescriptive and this ‘would mean trespassing on the domains of the devolved administrations’.
- The Holtham Commission (INDEPENDENT COMMISSION ON FUNDING AND FINANCE FOR WALES, 2010) recommended that a Barnett replacement formula should follow a top-down approach, arguing that a ‘simple’ top-down needs assessment model could adequately mimic some of the more complex local authority and NHS bottom-up approaches.

Thus according to the House of Lords Select Committee and Holtham Commission, the ability of a needs formula to achieve transparent and acceptable compromise is more important than a search for perfection. This reflects recent experience in Spain. Following reform of its regional financing system in 2009, Spain now uses a very simple formula to assess the spending needs of its Autonomous Communities (ACs), with the aim of the equalisation formula being to enable ACs to provide similar levels of essential welfare state services while making a similar fiscal effort (BOSCH, 2009). The formula is transparent, but has almost no methodological underpinning – its simplicity reflects the set of parameters that Spain’s 14 ACs were able to agree on (Bosch, personal communication).

Nonetheless, any formula – whether bottom-up or top-down – requires some agreement around which need indicators might be used and how they might be weighted, and some authors view this as being a challenge too far. Instead, some have suggested assessing DA spending need based on just one proxy indicator. MCLEAN and MCMILLAN (2005) for example propose the use of ‘inverse GDP’ as a proxy of need, but the issue with this measure is that there are many influences on public policy spending needs that may not be well related to this it.

Recently however there has been a growing interest in replacing the Barnett Formula by some form of needs assessment, rather than using a proxy. Three citizens juries’ that were convened as part of this project were unanimous that the Barnett system to determining grant is unfair and should be replaced. These juries perceived needs assessment to be fairer to all, and held the view that a system of needs assessment need not be expensive to implement (relative to the amount of grants allocated).

Nonetheless there are two issues that make it potentially more challenging to use needs assessment for the UK’s DAs than it is for local authorities. First is the issue that the territories may be unable to agree on a formula to assess their spending needs; second is the specific challenges that arise in
implementing needs assessment in the case of devolved governments that have substantial policy autonomy. The remainder of this paper considers each of these issues in detail.

4. ISSUES IN NEEDS ASSESSMENT (1): WOULD TERRITORIES AGREE ON NEEDS?

One of the main arguments used against replacing the Barnett Formula with needs assessment is that needs assessment is inherently subjective (MIDWINTER, 2002). The normative aspect of determining needs raises difficult questions about which needs are ‘legitimate’ rather than the result of a policy choice, and which indicators should be used to measure needs. The subjectivity of determining spending needs leads some authors to argue that needs assessment for the UK’s DAs will be unworkable, as politicians will be unable to reach agreement as to what a needs-based formula would look like (MCLEAN and MCMILLAN, 2005).

This paper tests this hypothesis by comparing the needs assessment formulae that England and Scotland use to allocate resources for health and school education within their jurisdictions. Specifically, the paper compares the relative spending needs of different areas as assessed by the English and Scottish formulae. Health and education are the two largest items of devolved expenditure accounting for over half of all DA spending. The Scottish Government uses a detailed needs assessment formula to allocate the majority of its health budget across 14 territorial health boards. In England, a needs assessment formula is used to allocate the large majority of NHS spending across 150 territorial Primary Care Trusts. In both England and Scotland, these healthcare allocation formulae have been in place, in one guise or another, since the late 1970s.

The two territories’ health formulae both aim to allocate resources in such a way as to equalise the spending needs of the different health boards, given the demographic and morbidity characteristics of their populations, and the costs of delivering health services in different parts of the country. But the formulae have been evolved separately over many years by different governments, and these governments have, in recent years especially, pursued quite different agendas for their respective national health services (GREER, 2004; FORBES, EVANS and SCOTT, 2010). Given this divergence, it might be expected that the English health formula would allocate resources for health in a quite different pattern from the Scottish health formula.

To test the hypothesis that the English assessment of relative health spending needs is significantly different from the Scottish assessment of relative health spending needs, we applied each formula in turn to all 176 health boards in the UK, and then aggregated them to each of the nine English regions and three UK territories. To compare the results, we use each formulae to give each of these areas a need score. This score relates spending need in a given area to the average of English spending need which we took as 1. For example, a score of 1.1 indicates that an area has a spending need 10% above the English average. The formulae are complex and rely on a large number of indicators; (BALL, KING and EISER, 2012; BALL, EISER and KING, Forthcoming) describe the formulae and our methodology in further detail.

To test the similarity of the formulae, the relative need scores for each area according to the Scottish formula were regressed on the equivalent need scores according to the English formula, i.e.:

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1 150 English PCTs; 14 Scottish Health Boards; seven Welsh Health Boards; and five Northern Irish Health and Social Care Trusts.
where \( ESN_i = \alpha_0 + \alpha_1 SSN_i + e_i \) (1)

Another major area of DA spending is education. The Scottish Government uses a formula to allocate school education resources to local authorities (LAs) in Scotland; likewise the Westminster government uses a formula to allocate resources for school education to LAs in England (BALL, EISER and KING, 2012). As in the case of health, there are significant institutional differences between the Scottish and English education systems, including the exam framework and the age of transition from primary to secondary school. The English and Scottish education allocation formulae might be expected to allocate resources in a very different way. As with health, we test this hypothesis by applying the English and Scottish education formulae in turn to the UK’s local education authorities, aggregating the results to the level of the English regions and UK devolved territories, and comparing the formulae using equation (1).

The results of applying equation (1) to both the health and education formulae are shown in Table 1. Column A considers the similarity of the education formulae. The coefficient \( \alpha_1 \) is statistically significant. Also, it is not statistically different from unity which indicates that, on average, the two formulae assess the relative needs of the 12 regions for education spending in the same way. The \( R^2 \) of 0.70 however suggests some variation around this average relationship. The area for which the formulae disagree most is London. The English formula assesses its need at 17% above the English average, while the Scottish formula assesses its need at 2% above the English average.

The main reason for this differential is that the English formula includes an ‘Area Cost Adjustment’ (ACA). The ACA assesses an area’s spending need resulting from higher labour market and other factor costs. The Scottish education formula does not have an element relating to these types of cost (indeed the Scottish formula is more likely to compensate areas for the costs associated with sparsity/rurality). Column B repeats the regression in column A, but having removed the ACA element of the English formulae. The two formulae now appear very similar, with the English formula explaining 97% of the variation in the Scottish formula. The coefficient \( \alpha_1 \) however has increased to 1.2, suggesting that the Scottish formula is scaled slightly more ‘steeply’ – giving relatively more resources to the most needy regions and relatively less to the least needy.

Column C presents the results of regressing the English health need scores on the Scottish health need scores. The coefficient \( \alpha_1 \) is highly significant, although it is less than unity and the \( R^2 \) of 0.68 suggests some variation about this average. As with the education formula, much of the discrepancy between the formulae is due to the fact that the English health formula contains an ACA which tends to allocate relatively more resources to London and the south east – over and above needs relating to demographics and morbidity – than does the Scottish formula. Excluding the ACA from the English formula and re-running the regression (column D) sees the coefficient \( \alpha_1 \) rise to unity and the \( R^2 \) increase to 0.92.
Table 1: Regression results

Regression of regional spending needs assessed by the English formula on regional spending needs assessed by the Scottish formula

<table>
<thead>
<tr>
<th>Education formula</th>
<th>Education formula (excluding ACA)</th>
<th>Health formula</th>
<th>Health formula (excluding ACA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient on</td>
<td>(A)</td>
<td>(B)</td>
<td>(C)</td>
</tr>
<tr>
<td>Scottish formula</td>
<td>1.108 (0.227)***</td>
<td>1.204 (0.066)***</td>
<td>0.636 (0.138)***</td>
</tr>
<tr>
<td>R²</td>
<td>0.701</td>
<td>0.971</td>
<td>0.68</td>
</tr>
</tbody>
</table>

Standard errors in parentheses. *** = significant at 1% level. N=12 in all cases

This analysis suggests that if ACAs are ignored, then the English and Scottish need formulae, for both education and health appear very similar (Figure 1). However, two issues would have to be resolved before this agreement could lead to all DAs and England agreeing on an assessment of needs for these two important services.

First, England and Scotland would need to agree on a common approach to the labour market cost problems addressed by ACAs. It might be thought that they would disagree here, because it might seem that Scotland has made a political decision to ignore these problems within Scotland while England has made a political decision to include them within England. In practice, though, Scotland does pay some heed to these issues, because its health formula allocates marginally more resources to health boards in urban areas such as Edinburgh and Glasgow to compensate for higher costs there. However, this urban area allowance is very small, because wage costs within Scotland vary only slightly. Given that Scotland is willing to make some adjustment for these costs, it seems possible that it would agree to making rather more allowance for the much larger problems that arise in and around London. Our three citizens juries, made up of residents of England, Scotland and Wales respectively, expressed different views regarding which types of spending needs should be allowed for within a spending needs formulae. However, the three juries were unanimous that it was more important to agree on a spending needs formula than to allocate resources on an equal per capita basis, which was seen as being unfair.

Second, the other DAs (Wales and NI) would also need to agree that the assessment of their spending needs made by the English and Scottish formulae was acceptable. In considering this question, Wales and NI might first compare these formulae’s estimates with an equal per capita allocation. Doing so (Figure 1) would reveal that both the English and Scottish formulae are closer to each other, in how they assess the spending needs of Wales and NI, than they are to an equal per capita allocation. Also, both needs formulae would be more generous to Wales and NI than an equal per capita allocation would be.
Figure 1: Comparing English and Scottish formulae estimates of regions’ per capita spending need

Notes: the axis shows each regions’ per capita need score where average need in England is equal to one. The ACA is excluded from the English formulae.

Wales and NI might also wonder whether they would be ‘better off’ with some alternative, simpler indicator of their spending needs. One alternative that has been proposed is to base grants on the inverse of gross value added (GVA) per head (MCLEAN and MCMILLAN, 2005). Figure 2 compares the allocations each region would receive on this indicator with the average education needs given by the Scottish and English formulae and the average health needs given by the Scottish and English formulae, and with an equal per capita allocation.

Figure 2 shows that the index of inverse GVA would treat Wales and NI very generously. However, it is most unlikely that Scotland and England would agree to use this measure, which would give Wales and NI far more than would be warranted by the Scottish and English needs formulae. And given a choice between using needs assessment based on the Scottish and English formulae, or an equal per capita allocation, Wales and Northern Ireland would prefer the former.
5. ISSUES IN NEEDS ASSESSMENT (2): COULD NEEDS ASSESSMENT HANDLE DIFFERENCES IN SPENDING PRIORITIES?

The three citizens juries convened as part of this research were anxious that any needs assessment system should be compatible with the policy autonomy of the DAs, and that no grants allocation system should ‘violate the sovereignty’ of the DAs. A major criticism of the Barnett Formula, as noted previously, is that the grants paid to DAs change in line with changes in English spending. This is becoming a serious weakness now that major policy differences are arising between England and the DAs, notably in health and education, reflecting the DAs’ preferences for a more social democratic approach to public services. One example concerns the funding of higher education (HE) where the decision in England to introduce tuition fees, and so cut public HE spending there, resulted in lower block grants for the DAs, even though they continue to provide free access to HE. Changing grants in line with changes in English spending implies that English spending policies are taken as a standard which seems counter to the spirit of devolution.

Most other commentators have avoided these issues. For example, although the Holtham Commission proposed using a simple formula for calculating the territories relative needs, it suggested that for each DA the resulting needs adjustment factor should be applied to the change in English spending (i.e. the change in DA block grant in a given year would be a function of the change in English spend multiplied by the needs adjustment factor).

This section considers how a system of grants based on needs assessment could operate when the DAs pursue widely different levels of public spending.
The issue of policy differences cannot be addressed satisfactorily unless the DAs have some tax-raising powers of their own. No matter what block grant scheme is used, a DA without tax powers will be forced to match any grant changes with spending changes. With tax powers however, even basing block grants on English spending will not constrain a DA to follow changes in English spending, because it can offset any change in its grant with a change in its own tax rates.

Table 2 illustrates and compares two grant schemes which both give the DAs some tax raising powers. In one, standard spending is taken as English spending. In the other, which seems more in keeping with the spirit of devolution, standard spending is taken as the unweighted mean of English and DA spending. In this second scheme, we use the unweighted mean rather than a population-weighted mean, because a population-weighted mean would result in standard spending that was equivalent to English spending for all intents and purposes.

Table 2 refers to Scotland, Wales and NI as devolved administrations (DAs) and is based on the following assumptions:

- The populations of the four territories are as given in row 1.
- The territories have agreed on a top-down needs formula which assesses their relative per capita need to spend at a given time (across all devolved services, and relative to UK average need of 1.0000) as in row 2.
- The UK government has to determine a total sum to allocate in grants, to support spending on devolved services, in the light of its budgetary position and other spending responsibilities. In our example, we take this sum to be £3,000 per capita.
- The UK government wishes to allocate this grant total between England and the DAs for the forthcoming year.
- Just as the DAs can vary tax rates on devolved taxes in their areas, so the UK government can vary tax rates on ‘devolved’ taxes in England if it feels it needs to do so. Indeed, the spirit of allowing the DAs to change their spending provided they change their tax rates suggests that the UK government should alter English tax rates whenever it wishes to change spending in England.
- Changes in spending that may be needed to offset inflation are ignored.
- England and the DAs have equal per capita tax bases. Either scheme covered by Table 2 could be adapted to offset any actual differences, but we ignore these differences for simplicity.
- Once the grants for the forthcoming year are worked out and announced, each territory decides to repeat the current year’s spending in the forthcoming year. (If an area changed its spending, then it would need to make a matching change in its tax revenue.)

In the following analysis, we take need adjusted spending per capita on devolved services in England and the DAs as a measure of ‘policy’ in each territory. For example, if Scotland’s spending need was 5% higher than England’s, and if England spent £5000 per capita on devolved services and Scotland spent £5250 per capita on the same services, then the analysis assumes that England and Scotland are pursuing equivalent policies. Although this approach to measuring policy differences is not sensitive to changes in the distribution of spending between different devolved services, it is indicative of major differences in public policy provision in each territory, for example if one territory adopted a much more social democratic approach to public service provision than the others.
Arguably, it is this assessment of broad, ideological policy differences, rather than a more detailed understanding of the distribution of public spending on specific services, that is most important for grant allocation to devolved governments. This approach to measuring policy differences is somewhat crude, but also has the advantages of transparency and simplicity.

Grant allocation and tax rates when per capita spending is similar in all territories

Suppose that all territories adopt policies which would cost £5000 per head in an area with average needs. Then standard spending will be £5000 whether English spending or mean spending is used as the standard (Panel 2, row 3). The actual spends that would be required to meet these policies are shown in row 4; these are above or below £5000 according to whether a territory’s needs score is above or below 1.0000.

With standard spending at £5000 per head, and with the government determining a total grant of £3000 per head, the implication is that the government expects any territory which sets the standard spending to need to raise tax revenue of £2000 per head; this is taken as the standard tax yield for the forthcoming year (row 5). The grant for each area for the forthcoming year is shown in row 6: it is set equal to the row 4 spending that the area would need for standard services, minus the row 5 standard tax yield.

Assuming that each territory actually spends at the standard level in the forthcoming year, then its spending will be as shown in row 7, and its tax revenue must equal this figure minus its grant, as shown in row 8. So each territory can have the standard service level with the same standard tax of £2000 per head.

Panel 3 explores the case where all territories have cut their needs-adjusted spending to £3800 per head. In this case, needs adjusted standard spending is £3800, whether English spending or mean spending is used (row 9). The actual spends that would be required to meet these service levels are as in row 10.

With standard spending at £3800 per head, and with the UK government determining a total grant of £3000 per head, the implication is that the UK government expects any area that set the standard spending to need to raise a tax of £800 per head; this is taken as the standard tax yield for the forthcoming year, (row 11). The grant for each area in that year is shown in row 12, and equals the row 10 standard spending minus the row 11 standard tax yield.

Assuming that each area actually continues to spend at the standard level in the forthcoming year, then its spending will be as shown in row 12, and its tax must be set as this figure minus its grant, (row 13). So each area can have the standard service level with the same standard tax of £800 per head.

Grant allocation and tax rates when per capita spending is very different between territories

The key challenge for a future grant scheme in the UK is to handle cases where the territories pursue policies which result in very different levels of total per capita spending. Panels 4 and 5 consider this possibility. In each case, it is assumed that actual needs-adjusted spending in the current year is £3800 per head in England and £5000 per head in each DA. If English spending is taken as the standard, then the standard will be set at £3800, as shown in panel 4, row 15. If mean spending is
taken as the standard, then the standard will be set at £4700, as shown in panel 5, row 21. The actual spending needed for these standards, allowing for needs, are shown in rows 16 and 22 respectively.

As the UK government is setting the total grant payment at £3000, then in the panel 4 case it must set the standard tax revenue as £3800 minus £3000, that is £800, as in row 17. And in the panel 5 case it must set the standard tax revenue as £4700 minus £3000, that is £1700, as in row 23. Each area’s block grant is set at the actual spending it needs for the standard level minus its standard tax revenue, as shown in rows 18 and 24. Notice that for each area these grant figures are quite similar, despite the very different standard spending figures used. Assuming each area repeats its current spending in the forthcoming year, then its spending will be as shown in rows 19 and 25 respectively, and its required tax revenue will be as shown in rows 20 and 26 respectively.

If English spending is taken as the standard, (panel 4), then a fall in English spending from the panel 2 levels puts a little upward pressure on tax rates elsewhere. What happens is that all areas are now given a lower figure for standard spending and a lower figure for their standard tax yield, but the standard tax yield falls equally while the standard spending figure falls most in high needs areas, so the DAs, which have high needs, lose the most grant and must offset this loss with relatively higher taxes.

If mean spending is taken as the standard, (panel 5), then a fall in English spending from the panel 2 levels puts much less upward pressure on tax rates elsewhere. This is because the lower English spending has less effect on the standard spending figures for the DAs, and so less effect on their grants. Thus, aside from seeming closer to the spirit of devolution, using mean spending also insulates each DA much more from changes in English spending.

In summary, Table 2 takes spending per capita as a broad indication of the policy choice of each territory, and it shows how allowing the DAs a measure of tax autonomy gives them freedom to set their own policies. Moreover, Panel 5 shows how a system of block grant allocation could operate in such a way that the level of the DAs’ grants are not determined purely by English policy, which seems more in keeping with the spirit of devolution than the Barnett formula.

The suggested system is illustrated for the case where a simple top-down needs assessment has been devised and agreed upon. One issue with any such needs assessment formula is that it would presumably need to be tweaked over time to reflect changes in the average mix of public service spending across services. For example, if there is a trend towards an increasing share of health spending relative to education spending, the weight attached to indicators of the elderly versus the young in the needs formula may need to be adjusted. Incidentally, it would be in keeping with the spirit of the Panel 5 scheme for trends to be based on the mean spending policies of England and the DAs.

One interesting feature of the Panel 5 scheme is that seems to be well able to handle the challenges which arise from the UK’s asymmetric constitution, where the Westminster government is both the UK government and the English government. Two examples will illustrate this.

First, suppose the UK government wishes to reduce its deficit by cutting public spending, and suppose it prefers to cut spending on devolved services rather than, say, defence. Then it can
reduce the total amount it pays in grants to England and the DAs, and match the fall in England’s grant with reduced English spending on devolved services. Of course, English citizens will then face poorer services while paying the same amount in taxes. If the DAs react to the grant cut with spending cuts, then citizens in the DAs will face the same situation. But the DAs will also have the freedom to maintain their previous spending by increasing their own devolved taxes.

Second, suppose the UK government wishes to increase spending on devolved services in England, say on health, and suppose it wants to fund this by raising a UK tax, say VAT, rather than by raising a tax which is devolved. Then it can raise VAT and pay the extra revenue into the total amount that it allocates in grants to England and the DAs, and it can match the rise in England’s grant with higher English health spending. The DAs will receive more grant, which can be seen as an offset against the higher VAT paid by their citizens, and they can use this extra grant to increase spending on health or any other devolved service, or instead to reduce their own devolved taxes.
Table 2: Grant allocation with two alternative measures of standard spending

<table>
<thead>
<tr>
<th>Row</th>
<th>Item</th>
<th>England</th>
<th>Wales</th>
<th>Scotland</th>
<th>NI</th>
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<tr>
<td></td>
<td><strong>Panel 1: Key data</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1</td>
<td>Population (million)</td>
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<td>3</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Relative needs score</td>
<td>0.9912</td>
<td>1.0600</td>
<td>1.0200</td>
<td>1.0800</td>
</tr>
<tr>
<td></td>
<td><strong>Panel 2: All areas set needs-adjusted spending at £5,000 per head, and standard spending is set at either England’s spending or mean spending. (All figures in £ per head.)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Needs-adjusted standard spending</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>4</td>
<td>Standard spending (row 3 x row 2)</td>
<td>4,956</td>
<td>5,300</td>
<td>5,100</td>
<td>5,400</td>
</tr>
<tr>
<td>5</td>
<td>Standard tax yield for forthcoming year</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>6</td>
<td>Block grant for forthcoming year (row 4 – row 5)</td>
<td>2,956</td>
<td>3,300</td>
<td>3,100</td>
<td>3,400</td>
</tr>
<tr>
<td>7</td>
<td>Actual spending in forthcoming year</td>
<td>4,956</td>
<td>5,300</td>
<td>5,100</td>
<td>5,400</td>
</tr>
<tr>
<td>8</td>
<td>Actual tax in forthcoming year (row 7 – row 6)</td>
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<td>2,000</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td></td>
<td><strong>Panel 3: All areas set needs-adjusted spending at £3,800 per head, and standard spending is set at either England’s spending or mean spending. (All figures in £ per head.)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>9</td>
<td>Needs-adjusted standard spending</td>
<td>3,800</td>
<td>3,800</td>
<td>3,800</td>
<td>3,800</td>
</tr>
<tr>
<td>10</td>
<td>Standard spending (row 9 x row 2)</td>
<td>3,767</td>
<td>4,028</td>
<td>3,876</td>
<td>4,104</td>
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<tr>
<td>11</td>
<td>Standard tax yield for forthcoming year</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>12</td>
<td>Block grant for forthcoming year (row 10 – row 11)</td>
<td>2,967</td>
<td>3,228</td>
<td>3,076</td>
<td>3,304</td>
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<tr>
<td>13</td>
<td>Actual spending for forthcoming year</td>
<td>3,767</td>
<td>4,028</td>
<td>3,876</td>
<td>4,104</td>
</tr>
<tr>
<td>14</td>
<td>Actual tax for forthcoming year (row 13 – row 12)</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
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<td></td>
<td><strong>Panel 4: England sets needs-adjusted spending at £3,800 per head while the DAs set £5,000. Assume standard spending is England’s spending of £3,800. (All figures in £ per head.)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15</td>
<td>Needs-adjusted standard spending</td>
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<td>3,800</td>
<td>3,800</td>
</tr>
<tr>
<td>16</td>
<td>Standard spending (row 15 x row 2)</td>
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<td>4,028</td>
<td>3,876</td>
<td>4,104</td>
</tr>
<tr>
<td>17</td>
<td>Standard tax yield for forthcoming year</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
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<tr>
<td>18</td>
<td>Block grant for forthcoming year (row 16 – row 17)</td>
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<td>3,228</td>
<td>3,076</td>
<td>3,304</td>
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<tr>
<td>19</td>
<td>Actual spending for forthcoming year</td>
<td>3,767</td>
<td>5,300</td>
<td>5,100</td>
<td>5,400</td>
</tr>
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<td>20</td>
<td>Actual tax for forthcoming year (row 19 – row 18)</td>
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<td>2,072</td>
<td>2,024</td>
<td>2,096</td>
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<td></td>
<td><strong>Panel 5: England sets needs-adjusted spending at £3,800 per head while the DAs set £5,000. Assume standard spending is the mean spending of £4,700. (All figures in £ per head.)</strong></td>
<td></td>
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<tr>
<td>21</td>
<td>Needs-adjusted standard spending</td>
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<td>4,700</td>
<td>4,700</td>
<td>4,700</td>
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<td>Standard spending (row 21 x row 2)</td>
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<td>4,982</td>
<td>4,794</td>
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<td>23</td>
<td>Standard tax yield for forthcoming year</td>
<td>1,700</td>
<td>1,700</td>
<td>1,700</td>
<td>1,700</td>
</tr>
<tr>
<td>24</td>
<td>Block grant for forthcoming year (row 22 – row 23)</td>
<td>2,959</td>
<td>3,282</td>
<td>3,094</td>
<td>3,376</td>
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<td>25</td>
<td>Actual spending for forthcoming year</td>
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<td>5,300</td>
<td>5,100</td>
<td>5,400</td>
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<td>26</td>
<td>Actual tax for forthcoming year (row 25 – row 24)</td>
<td>808</td>
<td>2,018</td>
<td>2,006</td>
<td>2,024</td>
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6. CONCLUSIONS

The Barnett Formula mechanism for allocating block grant to the UK’s DAs is unsatisfactory for two reasons. First, it does not consider the spending needs of the DAs. Second, it bases changes to the DAs grant on policy changes in England, without any consideration of the DAs own policy priorities. These two limitations are increasingly a source of tension in relations between the UK’s territories.

One simple alternative to the Barnett Formula would be to allocate grant to the DAs on an equal per head basis. This does not however seem compatible with the notion of the Union state, where there
is at least some desire to ensure that citizens in different parts of the State receive equivalent levels of public services if they pay similar taxes.

There have been increasing calls to replace the Barnett Formula with some form of spending needs assessment. Much of the recent debate has focussed on whether the approach to assessing DAs spending need should be the kind of complex, bottom-up models used to allocate resources to local government; or whether a simpler, top-down style approach would be more transparent, less open to political manipulation.

Whatever the precise form the needs assessment formula might take, there are two major challenges to the use of needs assessment in a devolved government context:

- First, it is unclear how likely it is that devolved governments would agree on a formula to assess their relative spending need;
- Second, the fact that devolved governments can pursue very different policies makes it harder to determine the policy ‘standard’ against which needs are assessed.

By comparing how health and education spending needs are assessed within England, with the way that these needs are assessed within Scotland, this paper has shown that the two countries have very similar perspectives on the relative spending needs of the UK’s regions and territories. The marked similarity between the English and Scottish perspective on relative spending needs for health and education is perhaps surprising, as it follows over ten years of devolution, during which time the countries have pursued different policies regarding the NHS and education. This indicates that relative need, while subjective, does ultimately depend on a number of core indicators of demographics and socio-economics, and that these are relatively stable and consistent across the territories.

The only notable area of disagreement between the English and Scottish assessments of relative spending need relates to the allowance made for the higher labour market costs in the English formulae. The fact that these types of costs are not included in the Scottish formulae however is not the result of a political decision to exclude them. It simply reflects the fact that these types of costs – associated almost entirely with London and the southeast of England – are not a major ‘problem’ in the context of resource allocation within Scotland. If Scottish and English politicians were tasked with agreeing on a needs assessment formula for allocating resources to the UK territories, there should arguably be scope for compromise on this point.

In terms of the second issue, this paper has shown that, as long as the DAs have a reasonable degree of tax-raising autonomy, it is possible to design a grant allocation scheme that takes into account the spending/policy decisions of each UK territory in determining the level of grant allocated to each territory. The scheme envisaged takes territories’ spending in the current time as an indication of their policy choice, and takes the average policy choice of the territories as a standard against which relative needs can be taken into account. The scheme has the advantage that, should England pursue a markedly different public policy agenda, the English policy decisions do not completely dictate the level of grant received by the DAs.

Demand to replace the Barnett Formula with a spending needs assessment is growing, as tensions mount over the perceived inequities in the distribution of public spending across the UK. This paper
demonstrates that two of the key challenges to using spending needs assessment to allocate resources to devolved government can be overcome. Indeed, the case for moving to a spending needs approach actually becomes stronger as the DAs gain fiscal autonomy, because it enables the design of a scheme that takes each DAs’ autonomously determined spending policy into account in specifying an average UK-wide standard against which needs can be assessed. Design of a spending needs formula will not be easy, but scope for reasonable compromise is stronger than is sometimes imagined.

7. ACKNOWLEDGEMENTS
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8. REFERENCES


S. GREER (2004) Four way bet: how devolution has led to four different models for the NHS. Constitution Unit, University College London, London.


Endnotes

1 We are grateful to the following individuals for giving up time to share their views: former First Minster of Scotland Jack McConnell; former First Minster of Wales Rhodri Morgan; Professor Gerard Holtham; former Catalan Minister of Finance Antoni Castells; Nuria Bosch (Institut d’Economia de Barcelona); leaun Wyn Jones AM; former MSP Jeremy Purvis; former MSP Derek Brownlee; former NI Public Spending Director Richard Pengelly; and Lord Richards, Lord Sewell and the Earl of Mar and Kellie (all members of the House of Lords Barnett Committee 2009).

ii A mathematical property of the Barnett Formula is that it should induce convergence in per capita spending levels between the devolved territories and England over time. This is because, for a given nominal increase in ‘English’ spending, the per capita spending increment is the same across administrations, and thus the effect of the different initial spending levels should become proportionately less over time. However, it is clear that convergence has not occurred as quickly as it would have been expected to, due to the success of the devolved territories in periodically bargaining for additional grant increments outwith the operation of the Barnett formula (Christie and Swales, 2010).

iii In addition to it producing allocations that are unfair, the Barnett Formula is also criticised for being ‘procedurally unfair’. This criticism relates to the lack of transparency that exists in how the Treasury determines which elements of English spending are ‘consequential’ (i.e. relate to policy that is devolved to the DAs), and the lack of a transparent process for arbitrating these decisions (MCLEAN, LODGE and SCHMUECKER, 2008; SELECT COMMITTEE ON THE BARNETT FORMULA, 2009).

iv The German system makes only a very limited attempt to equalise Länder’s spending needs. Special purpose grants are allocated to small Länder (with a population less than 4 million) in recognition of the economies of scale in public service provision that can be achieved by larger Länder; and some additional grants are allocated to Länder of the former East Germany to support the reconstruction process, (although these are being phased out) (BUETTNER, 2008).

v As part of our research, we facilitated three citizens’ juries with residents of England, Scotland and Wales. After receiving some background to the current system of grant allocation to the UK’s DAs, the juries were asked to envisage themselves acting as a newly formed grants committee that had been tasked to decide which of a number of different types of spending needs they would allow for in a needs assessment approach to allocating grant to the DAs. Following this exercise, the juries were also asked to give their views more generally as to whether they thought grants should be allocated to the DAs using the existing Barnett Formula, or some alternative approach.