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Fiscal Federalism in the UK

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1. Introduction

This chapter is concerned with inter-regional fiscal flows in the United Kingdom. The UK is an unusual case study in that it has no constitution: there are therefore no constitutional guarantees of the economic powers of sub-national governments. Because of this lack of a constitution, discussion of fiscal flows in the UK is somewhat different from that in states which have federal structures and constitutional safeguards to protect the powers of sub-national governments.

None of the sub-national units that comprise the UK have significant tax raising capabilities. With the exceptions of the property taxes which part-finance local government and the 3p variation in income tax rates available to the Scottish Parliament, there are no tax raising powers available to any sub-national authority in the UK. Given that property taxes generate only around 20 per cent of local authority revenue and that the exercise of the 3p income tax power would increase the Scottish Parliament's income by less than 5 per cent, it is fair to argue that the UK's fiscal structure is characterised by substantial vertical imbalance. Due to the lack of sub-national revenue raising powers, the discussion in this chapter is therefore weighted towards comparison of inter-regional public expenditure flows.

It is structured as follows: Section 2 briefly reviews the history of the mechanisms used to allocate public spending in the UK and speculates on why these have lasted for almost 30 years even when they appear manifestly inequitable. Section 3 considers the methodology used by HM Treasury to estimate public expenditure in the regions and nations that comprise the UK which is known as Public Expenditure Statistical Analysis (PESA). The next section examines the only full set of inter-regional flows estimates for any part of the UK, which is known as Government Expenditure and Revenue in Scotland (GERS). The final section discusses how the UK approach to the measurement of sub-national fiscal flows reflects its particular political structure.

2. History of Fiscal Flows between the Nations of the UK

In 1888, Lord Goschen, Chancellor of the Exchequer, decided to allocate funds to England and Wales, Scotland and Ireland in the proportions 80:11:9. This was intended as "a device for quiet redistribution: enough to alleviate grievances in the periphery but not to provoke resentment at the centre" (Gallagher and Hinze 2005). It provided a simple rule for allocating expenditures and so avoided painful clashes over government resources between different parts of the UK. This was perhaps astute, given that the history of Scotland, Ireland and England had been characterised by conflict. Importantly, this mechanism also preserved Treasury control over the UK budget. The Treasury has generally opposed external involvement in the UK budget process.

The "Goschen Formula" appears unbalanced, but this is due to the disparity in the size of the constituent nations that comprise the UK. England, Wales, Scotland and Northern Ireland now account for 83.8%, 5%, 8.4% and 2.8% of the population of the UK respectively. The disparity in population explains the difference in the size of the allocations: it also naturally leads to a disparity in political influence in the UK parliament. Rather than have sporadic conflict over the allocation of public spending to the constituent parts of the UK, the pragmatic approach for more than a century

has been to use formulaic allocation, where these allocations have been relatively generous to the smaller nations. The longevity of the arrangement and the associated stability of the Union perhaps reflects Spoloare (2007) who shows that secession is more likely when potentially seceding regions are relatively large. The formulaic approach has had two consequences: firstly, the generous allocation has helped counter nationalist claims that the smaller nations are treated unfairly; secondly, the costs of this mechanism to the average person in England are relatively low because the other nations are so much smaller. Significantly reductions in the generosity of allocations to Wales, Scotland or Ireland would provide only a small increase in per capita public spending in England.

Similar arrangements were in place throughout most of the 20th century. During the 1970's however, following significant cultural revival in Scotland and the discovery of significant oil and gas reserves in the North Sea support for nationalism in Scotland grew substantially. The same was true of Wales, though there the main drivers were cultural and linguistic. Northern Ireland experienced serious internal strife as a result of conflict between nationalist and unionist factions, which was rooted in historical and religious divisions. In 1979, referendums on devolution were held in Scotland and Wales. Although neither reached the level of support necessary to initiate devolution legislation, a side-effect of this activity was a reappraisal of the funding arrangements for Scotland, Wales and Northern Ireland. The outcome was the so-called "Barnett-formula", which has been used to determine levels of government funding to Scotland, Wales and Northern Ireland since then. Unlike the Goschen Formula, the Barnett Formula applies to *changes* in spending on "comparable programmes". It works by allocating an additional amount to the budgets of Scotland, Wales and Northern Ireland that is equal to their current population share of any increase in spending agreed between the Treasury and relevant English spending departments, such as health or education. The devolved administrations are under no obligation to follow the same pattern of spending as the English departments. However, the additional funding that they receive depends on the relative success of those departments with whom they share comparable programmes. If the UK government decided that it would concentrate all extra spending on defence, none of the devolved administrations would receive a budget increase.

The Barnett Formula has survived a number of governments of different political persuasions and, thirty years after its introduction, is still used to determine the budgets of the devolved administrations. One reason for its longevity may be that governing parties in the UK Parliament generally prefer to have some representation in each of the constituent nations of the UK[1]. Any threat to the Barnett Formula may reduce the chance of achieving such representation. This strengthens the bargaining position of unionist politicians within Scotland and Wales when defending the formula, because they may be able to argue credibly that its abandonment would lead to electoral gain for nationalists. In addition, Secretaries of State for Wales and Scotland have tended to be Cabinet positions: having to allocate an MP from an English constituency to either job is also perceived to provide nationalists with an easy target.

[1] Northern Ireland, which has always organised its politics along unionist/nationalist lines, is an exception to this rule.

The Barnett Formula deals with only one aspect of the fiscal flows within the United Kingdom. This is because the "comparable programmes" cover a limited set of governmental spending programmes. The comparable programmes are set out in the "Statement of Funding Policy", which is devised and published by the Treasury. The 2007 statement catalogues comparability factors for Scotland, Wales and Northern Ireland for more than 650 separate programmes undertaken by UK spending departments. Social security and defence are examples of major spending programmes that are excluded from the Barnett Formula. However, there are some grey areas – for example, as a consequence of the 2012 Olympics, £3bn is being spent on economic regeneration in East London. But such spending has been deemed "not comparable" under the Barnett Formula by the Treasury although economic development would normally be classed as comparable. Nationalist politicians in Scotland, Wales and Northern Ireland have expressed dismay at this decision, arguing that they have been jointly "cheated" out of around £500m.

But the devolved administrations only control a share of the identifiable public expenditure within their territory. Social security spending accounts for 42.4 per cent of total identifiable expenditure within the UK. It comprises state pensions and a wide variety of benefits intended to compensate individuals for the risks of disability, unemployment, prolonged ill-health etc. In the UK, benefit payments have a geographic focus, but no regional or national element. They redistribute income, but do so through a direct relationship between central government and the individual or household. Rates are uniform and set for the UK as a whole. State pensions are also centrally funded. Individuals build eligibility through their contributions to the National Insurance scheme. Payments are drawn from current taxes and borrowing rather than being funded from a state investment scheme. The nations that comprise the UK have no role in the funding or setting of state pensions. Even the pensions of public sector employees do not form part of the annual expenditure limits set by the Treasury for the devolved administrations.

Oates' Decentralisation Theorem shows that centralised decision making results in an inefficient "one size fits all" outcome in respect of public good provision across a territory. When demands for public goods vary spatially and there are no spillovers, a centralised system of government will not deliver Pareto optimal allocations. Besley and Coate (2003) argue that an informed central government could take account of heterogeneous demands for public goods. But when the costs of local public spending are shared in a centralised democratic system, there will be conflicts of interest between elected representatives. This may lead to misallocation since spending will be biased towards areas whose representatives belong to the winning coalition and to voters having an incentive to elect representatives with high demands for public goods.

The UK fiscal system does not easily fit either model. Most national public goods – e.g. defence, regulation – are funded centrally. Local government has some limited control over the allocation of local public goods such as transport. But the majority of government spending in the UK is allocated either to redistribution or to merit goods. Redistribution is largely a central government function. It controls, administers and directly funds the social security system. Local government and the devolved administrations can introduce policies that indirectly have redistributive aspects. For example, local government may introduce housing policies that tend to help low-income households. And central government has moved some administrative aspects of housing support to local government. But almost all of the funding of directly redistributive programmes is controlled by

Westminster. Other major spending programmes cover merit goods such as health care and education. The devolved administrations, and to a lesser extent local government, can decide on the boundaries of merit good provision. However, Tiebout and Houston (1962) describe the difficulties associated with determining these boundaries:

> "The provision of merit goods involves certain problems of fiscal federalism. These problems emanate from the fact that the citizen, finding himself a constituent in several governments simultaneously, realizes that he must compromise his desire for local autonomy. This introduces the possibility of conflicts." Tiebout and Houston (1962 p 414)

These conflicts arise because constitutional arrangements may permit different levels of government to determine the range of merit goods available within their jurisdictions. They may come to different decisions and so different sets of merit goods are available in different areas. One important example in the UK is the provision of personal care for the frail elderly. Scotland has decided that this is a merit good and should be provided free to all citizens requiring personal care. In England and Wales, such care is charged for, though the charging rules differ slightly. However, Scottish taxpayers do not have to bear the consequences of the additional spending associated with this programme. This is because all of the additional costs are met from within the allocation to Scotland from Westminster that is determined by the Barnett formula. The immediate opportunity cost of the programme falls on other public sector programmes that would otherwise have taken place in Scotland. But the ultimate monetary cost falls on UK taxpayers in general (not just those in Scotland) and the welfare cost depends on the marginal cost of public funds (Browning 1976). Another example, though in this case the distinctions tend to be between health trusts, is the provision of drugs to combat cancer. The media and public find it difficult to accept any geographical variation in the availability of such drugs. Consequently they might be classified as national merit goods.

The Barnett Formula applies to the nations of the UK. It ignores the regional dimension of public expenditure within England even though some of the English regions have larger populations than Scotland, Wales or Northern Ireland. Spending allocations within England are mainly to local authorities and health trusts. The allocation mechanisms are highly complex, but their underlying principal is that the mechanism should provide sufficient resources to meet the cost of providing a uniform level of service across England. Thus, allocations to local authorities are mainly based on population size, but are adjusted to take account of differences in levels of need and in the cost of providing services.

The highly asymmetric fiscal treatment of different parts of the UK has largely driven by political expediency. There is little appetite for devolution *within* England. In 2004, only 22% of voters voted in favour of a regional assembly for the North-East of England, the region in England generally recognised as most likely to support a greater devolution of political power. When there is no prospect of the creation of bodies within England with significant tax-raising or spending powers, politicians may take the view that that there is little to be gained by allocating government statisticians to the task of measuring fiscal flows. However, King (1973) produced a seminal report on UK inter-regional fiscal flows for the Kilbrandon Commission on the Constitution, which was

asked to investigate the consequences of independence for Scotland and Wales and the economic effects of greater devolution within England.

King encountered significant difficulties in collecting data on both the expenditure and revenue sides of the regional accounts. The academic contributions of Short (1978), (1982) and (1984) Heald (1980), (1994), Short and Nicholas (1981), Heald and Short (2002), Blow, Hall and Smith (1996) and McLean and McMillan(2003) led to improved methodology and data, but all of these authors acknowledge the difficulty of obtaining accurate information on both public expenditure and tax revenue, particularly within England. Most of the studies focus on expenditure: the taxation side of the accounts is largely ignored, perhaps because sub-national tax raising powers have never had significant political support other than in Scotland.

The Treasury produced public expenditure data for English Regions from 1990, drawing on the methodological developments of the earlier academic studies. It is in a privileged position to collect these data, since it can ask spending ministries to produce accurate estimates of the distribution of spending within the UK. In addition, the UK is obliged to produce geographically disaggregated data for the EU. The Treasury thus asks for data for both NUTS1 and NUTS2 regions[2], even though ministries may use different geographies to classify their spending. An example would be the Department for Work and Pensions, which is responsible for the payments of benefits and state pensions to individuals and households. It has no need to have any geographic locus other than the address of benefit recipients, and can aggregate its data to any regional or national level.

The UK government has only supported efforts to calibrate inter-regional fiscal flows when political attention focussed on equity between the constituent nations and regions of the UK or when forced to do so by the EU. Even then, the focus has largely been on expenditure rather than taxation. McLean (2003) comments that "It is striking how the interest in regional spending patterns has paralleled that in devolution." While there has been some effort to regularise the collection and publication of relevant statistics, the major improvements in the data have tended to correlate with the strength of nationalist sentiment in the current political debate. Such an outcome is certainly not unique to the UK. Vaillancourt (2008) argues that, in relation to Canada, "outside reviews usually occur when equalization is under particular stress". In respect of inter-regional fiscal relations, these data play an important role within the policy debate.

The Treasury data from the early 1990s were precursors to the annual publication now known as PESA. In Section 3, we discuss this analysis in detail. The only part of the UK where serious attention has been paid to tax revenues as well as expenditure flows is Scotland, perhaps because of its different political context from other parts of the UK. In Section 4, we describe how these data have been constructed and used.

3. Public Expenditure Statistical Analysis

[2] For statistical purposes, the European Union divides the UK into 12 NUTS1 regions – Scotland, Wales, Northern Ireland and nine English regions. There is another "region" – the Continental Shelf – which is used by the UK government to allocate revenues from oil production.

The territorial analysis of public spending in the UK is conducted by the Treasury. It asks UK spending departments (excluding overseas departments and defence) how they allocate funds between England, Scotland, Wales and Northern Ireland. Where relevant, departments are also asked to supply estimates of allocations to the nine English regions. The Treasury are unwilling to share these data even within government. Heald (2001) describes the situation thus:

> *"The Treasury takes a proprietary view of its database and denies access to this even to the pre-devolution territorial departments and the post-devolution Executives."*

Perhaps due to this lack of access to the underlying data, there has been little academic interest in producing alternative estimates or in correcting errors in the published results. One notable exception is Cuthbert and Cuthbert (2006) who used the Freedom of Information Act to acquire the database on which PESA exercise is based. They found a number of problems with the published data, including fairly significant misclassification of expenditures as between Scotland and England:

> "As regards the identifiable expenditure comparison published in the Treasury's PESA, the 2005 publication said that *"figures for expenditure per head in the regions of England and the countries of the UK are therefore directly comparable"*. But when we obtained the detailed PESA database, by means of a Freedom of Information Act request, we found that at least £4.4bn of expenditure, (on a range of services, including prisons), is excluded from the basis of identifiable expenditure in England, while expenditure on the same services is included in Scotland." Cuthbert and Cuthbert (2006)

The UK has a "Sole Agency Arrangement" (SAA) for estimating the geographical pattern of public spending: the Treasury is that sole agency. Such arrangements tend to focus on a single estimation method: alternative methodologies tend not to be explored. More importantly, because all political actors do not see the Treasury as an impartial player, willingness to accept the accuracy of the data is constrained. Clearly, this reluctance increases when external commentators discover errors.

There are countervailing benefits from having the Treasury as the sole agency. It is in a better position that others to ensure that estimates comply with international national accounting standards. Thus, for example, regional expenditure data are collected on an accruals basis – activity is measured when it occurs rather than when it is paid for. This approach would be extremely challenging for non-governmental bodies. And the latest (2008) data conforms to the UN Classification of the Functions of Government (COFOG), which again would be difficult for external bodies to compile. The PESA data is also consistent with a number of aggregates drawn from the national accounts. Two of these are used principally for planning and control purposes – Departmental Expenditure Limits and Annually Managed Expenditure. The former is planned and controlled on a three-year spending review cycle; the latter is expenditure that cannot be subject to firm multi-year limits, such as social security and debt interest. Other aggregates with which the PESA data is consistent include public sector current expenditure, capital expenditure and depreciation. Hence, on the one hand, a SAA is both limiting in terms of methodology and potentially dangerous in respect of errors, but on the other it has the benefit, at least in the case of the UK, of being embedded within national and international accounting conventions, thus facilitating national and international comparisons.

One way to increase confidence in the data is to impose quality control standards. The Treasury have sought to do this by ensuring that the PESA data meet the criteria for "National Statistics". These are a subset of official statistics that have been verified by the UK Statistics Authority as being compliant with its code of practice for statistics. This code is intended to provide users of the statistics with assurance of no political interference and due diligence in their construction. However the accolade of being a "National Statistic" is not a guarantee of accuracy. Further, the value of this classification may be lost on politicians and commentators who find it difficult to distinguish between the collection of data and the political use to which it is put.

The methodology used by the Treasury to assign expenditures to regions is the "benefit" approach. The alternative "cash flow" methodology focuses on where taxes are collected and money is spent. The cash flow approach has little economic content because the location of spending and taxation may not coincide with the location of the burden of taxation and of the benefits of consuming publicly-funded goods. Both the "benefits" and "cash flow" approaches aggregate individuals, households or firms to construct estimates of inter-regional flows. The "economic gain" approach (Ruggieri and Yu 2000) focuses on jurisdictions rather than individuals and on incomes rather than consumption. Its rationale is that comparisons between regions are usually based on average income measures for relevant jurisdictions rather than comparisons of consumption at individual level. The "cash flow" and "economic gain" methodologies are largely unexplored in the UK although McLean (2003) collects some information on cash flows within English regions. Published PESA data include one set of estimates of wage costs ("cash flow") by region associated with spending where the regional distribution of benefit is not identifiable. Implicit use of the "economic gain" approach is made through regular comparisons of incomes at regional level with the implicit assumption that these are proxies for welfare.

The Treasury acknowledges problems with the "benefit" approach. In respect of the final incidence of benefit, for example, agricultural subsidies are allocated to the farmers who receive the subsidies rather than the final consumers of food. Spillovers are generally ignored in relation to the location of benefits. For example, both Scotland and Wales provide subsidised higher education to more students than their economies can absorb.

Another issue arises with the 17 per cent of UK government expenditure that cannot be assigned specifically as a benefit to the residents of a particular region. This is described as "non-identifiable expenditure". Much of this spending is allocated to national public goods. For example, major components of non-identifiable expenditure are national defence, overseas representation and regulation. PESA has no "memory" and therefore does not utilise information on whether spending and revenues have been skewed towards particular areas in the past. Thus, debt interest is also treated as non-identifiable. The Treasury do not publish tables covering both identifiable and non-identifiable expenditure at the regional level, thus avoiding the need to allocate benefits for non-identifiable expenditure. The most common international practice is to allocate these on an equal per capita basis, arguing for example, that citizens benefit equally from the provision of defence. This method is consistent with the treatment of defence as an indivisible public good, but one might argue from an insurance perspective that those with more assets benefit more from government protection and therefore that an income measure would be more appropriate. This approach would clearly imply relatively greater allocation of some components of non-identifiable expenditure to

regions with higher per capita incomes. The implications of this argument for the UK have not been explored.

In constructing PESA, there are also issues of comparability of function across regions. For example, water supply is a public sector activity in Scotland and Northern Ireland, but not in England or Wales. Thus Scotland's public expenditure includes charges for the costs of capital for Scottish Water. There are no equivalent charges in England or Wales, where investment in water is funded by water charges levied on households by private sector companies.

The data on expenditure include spending by local government, by devolved authorities and by central government in the region or country of the UK. PESA data for the countries and regions of the UK in 2006-07 are shown in Table 1. They suggest that Scotland, Wales and Northern Ireland each has significantly higher levels of per capita public expenditure than England. However, there is significant variation within England: spending per capita is higher in London than in any area other than Northern Ireland, while that in the South East is 15.6 per cent below the UK average.

Table 1: UK identifiable expenditure on services by function, country and region, per head 2006-07 (UK=100 for functions and £ per annum for total)

	General public services	Defence	Public order and safety	Economic affairs	Environment protection	Housing and community amenities	Health	Recreation, culture and religion	Education (includes training)	Social protection	Total
North East	80	133	101	104	80	109	108	112	105	113	*£7,892*
North West	90	87	106	97	179	94	107	87	99	109	*£7,756*
Yorkshire and Humberside	73	72	94	87	79	104	99	94	98	100	*£7,111*
East Midlands	81	107	78	80	77	59	89	83	94	92	*£6,468*
West Midlands	93	104	94	83	73	70	99	86	101	101	*£7,090*
Eastern	84	117	73	72	84	49	88	69	88	89	*£6,177*
London	118	119	172	146	78	195	108	118	118	103	*£8,550*
South East	79	106	78	70	90	48	91	76	89	86	*£6,165*
South West	78	122	73	82	89	49	92	79	89	96	*£6,513*
England	88	106	99	92	95	88	98	88	98	98	*£7076*
Scotland	148	90	89	156	133	163	114	161	114	109	*£8,544*
Wales	172	74	95	125	133	97	107	166	103	113	*£8,172*
Northern Ireland	193	0	166	122	90	263	108	144	113	117	*£8,990*
UK	100	100	100	100	100	100	100	100	100	100	
UK identifiable expenditure (£ Per Head)	*£129*	*£1*	*£470*	*£607*	*£146*	*£191*	*£1,548*	*£124*	*£1,216*	*£2,876*	*£7,308*

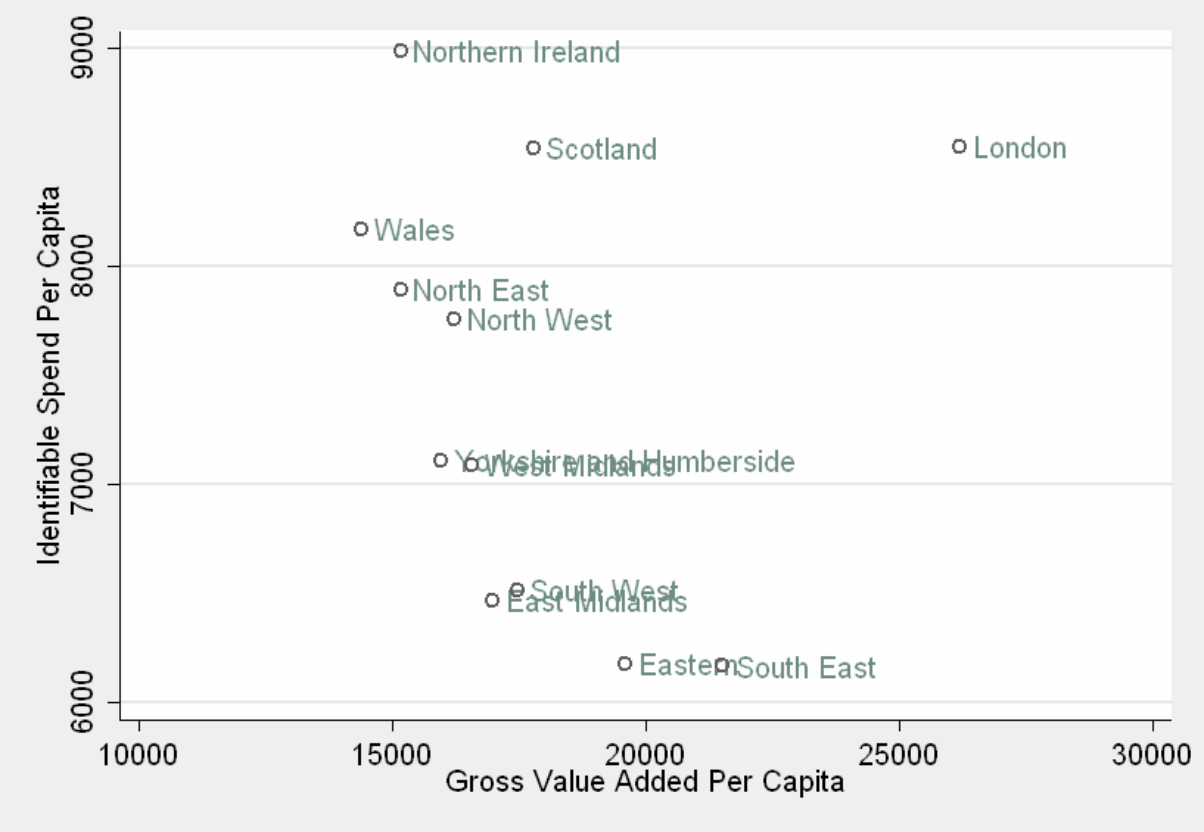
Source: Public Expenditure Statistical Analysis, HM Treasury

Many commentators argue that the PESA data prove that the Barnett Formula allocations to the nations of the UK are "unfair". Figure 1 illustrates this argument. It plots identifiable expenditure by

region (from Table 1) against regional Gross Value Added (GVA) which one might take as a proxy for private consumption. One might expect that a welfare-maximising social planner would allocate more public consumption to areas where private consumption was low. However, no such relationship is evident from Figure 1.

McLean et al (2008) argue that equity in terms of public expenditure means that "each area can provide the same standard of public services regardless of the wealth of the area". This is a neutral statement in terms of redistribution: it does not imply compensation in terms of publicly-provided goods for areas where private consumption is low. Nevertheless, in a world of fiscal decentralisation, this principle would suggest that areas with lower fiscal capacity should receive fiscal transfers to enable them to provide the same level of public services as elsewhere. But where there is no clearly redistributive mechanism determining inter-regional fiscal transfers, there need not be any clear relation between identifiable expenditure per head and the income of an area.

Figure1: Identifiable Public Spending Per Capita and Regional Gross Value Added



One way of measuring "distance" might be to consider how individuals perceive their identity. It is

Another way of explaining the pattern observed in Figure 1 is to recall that identifiable public expenditure in the UK covers public goods, merit goods and redistributive transfers. The costs of local public goods may vary positively with GVA: areas with high GVA are likely to have above average income and therefore the costs to the public purse of providing a uniform level of local public goods are likely to be higher. This partly explains the high levels of identifiable expenditure per head in London, where specific allowances have to be provided for many public sector workers.

On the other hand, the relationship between GVA and redistributive expenditure is likely to be negative: provided that the distribution of income and the returns to labour and capital within regions is broadly similar, areas where mean GVA is low are likely to attract more state transfers.

One might expect a negative relationship between expenditure on regional merit goods and GVA. This is because the set of merit goods may vary with the income distribution (Tiebout and Houston 1962). For example, if income levels are high, a greater proportion of the population may be prepared to treat education as a private good rather than a merit good[3]. Scotland, Wales and Northern Ireland now have powers to influence the set of merit goods available within their boundaries. Regions of England have no comparable powers. Average incomes in Scotland, Wales and Northern Ireland are below the UK average. It is therefore not surprising that these areas have tended to adopt a broader class of merit goods than England. These include free personal care for older people, free medical prescriptions, and subsidised or zero tuition fees. The political issue arising from this is that the Barnett Formula ensures that the ultimate cost of these decisions on regional merit goods is born by all UK taxpayers rather than those in the relevant territory. This is widely viewed as one of the key failings of the UK system of sub-national fiscal arrangements.

However, a quite different explanation of Figure 1 might recognise that the dynamics of UK politics effectively prevent public spending being allocated as if by a dispassionate social planner. The recent works of Alesina and Spoloare (2005), Bolton and Roland (1997), Spoloare(2007) show that the possibility of a state breaking up may influence bargaining over the regional allocation of public funds. Alesina and Spoloare start from the proposition that, when borders are determined democratically, people that are "distant" in geographical, ethnic, cultural or even in preferences over income distributions may have different preferences over public goods from those at the centre. But they have to contribute in the same way as other citizens to the costs of centrally-determined public goods. This gives them an incentive to secede and a threat point over constitutional arrangements. They may ask "but what if individuals far from the center could be compensated for staying in jurisdictions that are not close to their preferences?" (Alesina and Spoloare 2005 P53). Forms of compensation may include lower taxes and/or net transfers. Examples where this argument may have validity include Quebec, the five special status regions in Italy and the northern regions of Spain.

This literature provides a different explanation for Figure 1. The generous public service provision in Scotland, Wales and Northern Ireland may reflect beliefs about relative levels of need, but also may reflect a willingness of the UK government to pay a "premium" to these areas to insure against a break-up of the Union. Of course, the costs of this premium may be too high, giving the rest of the UK an incentive to secede from the over-expensive Celtic Fringe. As mentioned previously, however, because this fringe is relatively small, more generous public-sector provision is not cripplingly expensive for the centre. This argument accords with Lord Goschen's description of the formula he introduced to determine funding allocations between in England, Scotland and Ireland.

[3] This argument is consistent with the substantially higher rates of private schooling in the South-East of England compared with other parts of the UK.

worth noting that in the British Social Attitudes Survey, the areas where respondents are least likely to describe themselves as British are Scotland, Wales and Greater London – the areas with the most generous levels of public spending[4].

This argument also creates a dynamic where politicians in the peripheral areas have an incentive to maintain or even enlarge their "distance" from the centre[5]. This could be achieved, for example, by supporting cultural or economic activities that reinforce distinctive aspects of the periphery. However, the willingness of the centre to secede may be increased if arguments that geographical variation in the provision of merit goods such as education and health care is intrinsically unfair attract political support.

A further argument has to do with the control of macroeconomic policy and finance in the UK. This has traditionally been under the complete control of the Treasury, making it the most powerful of all of the ministries in Whitehall. It has guarded this position jealously. A federal structure of government in the UK would weaken its pre-eminence. The majority report of the Royal Commission on the Constitution (1973) considered, but rejected, a more federal structure for the UK and recommended instead directly elected assemblies for Scotland and Wales. This was the last occasion on which the powers of the Treasury came under serious discussion. And to ensure that no further threat arose, the Treasury may have been prepared to go along with the seemingly generous Barnett Formula, rather than re-open the discussion on federalism.

The PESA data show how the distribution of identifiable public funding within the UK regions and nations vary. This funding covers the supply of public goods, merit goods and redistributive transfers. The relationship between spending per capita in the regions and nations must be seen in the light of the ability of sub-national governments to influence the set of these goods that are available. Ability to influence these is highly constrained in the English regions, but less so among the devolved administrations due to their greater political powers. The key question to which there is no clear answer at present is whether the present funding structure can withstand variations in the provision of merit goods across the nations of the UK without requiring the nations to take fiscal responsibility for such variations.

4. Government Expenditure and Revenue in Scotland (GERS)

Scotland is the only part of the UK for which complete fiscal flows are calculated on a regular basis. The first data were compiled in 1992 for the Conservative Secretary of State for Scotland. There was a strong suspicion that the intention was to use this information to counteract nationalist claims that Scotland was "supporting" the UK economy through its oil wealth. The exercise has been repeated regularly since then. The most recent publication was in June 2008, the first time that the data were published when a nationalist administration was in power in Scotland. Nevertheless, the "National

[4] Northern Ireland is excluded from this survey.

[5] Note that another dimension of "distance" might be local preferences over merit goods.

Statistics" classification of the data means that these data have not been subject to political interference.

The GERS data have always been collated by Scottish civil servants rather than by the Office for National Statistics. Nevertheless, the data are now consistent with PESA on the expenditure side and with the Office for National Statistics Public Sector Finance Statistics on the revenue side as well as being consistent with the 1995 European System of Accounts. Thus, although Scotland is the only part of the UK for which inter-regional fiscal flows are estimated, the data on which these are based are consistent with relevant UK aggregates. Improvements in the quality of these data have almost certainly been a response to past criticisms by academics and politicians. Thus, although there is a single agency responsible for data collection, it has shown itself willing to respond to criticism.

The public expenditure side of GERS, like PESA, uses the "benefit" principle. PESA relates only to the "identifiable" components of public expenditure. To construct a complete expenditure account, GERS must allocate a portion of UK "non-identifiable" expenditure to Scotland. For example, an allocation of debt interest is made on the assumption that all UK residents bear an equal burden of UK tax liabilities. This assumption would be strongly contested by nationalists, who argue that North Sea Oil made a very significant contribution to reducing the UK's indebtedness, particularly during the 1980s and 1990s. Defence expenditure is also allocated on a per capita basis, although on a "cash-flow" basis, its distribution would be skewed towards the South of England. In 1996-97, Scotland only accounted for 2.3% of defence related employment (House of Commons 1999). Together, debt interest and defence account for 76 per cent of non-identifiable expenditure.

The revenue side of the accounts reflects where tax burdens are imposed on Scottish residents and businesses. No analysis is undertaken of tax shifting. The most recent GERS revenue data is shown in Table 2. It shows the yield from each source of taxation and its share of the relevant UK tax revenue (Scotland's population comprised 8.44 per cent of the UK in 2006).

Income tax receipts, which are the major source of revenue comprising 24 per cent of the total, are residence-based rather than workplace-based. Corporation tax is problematic: it is based on profits generated in Scotland rather than on the location of company headquarters. These use the ONS Regional Accounts methodology, which allocates profits to regions on the basis of wage and salary bills except for the manufacturing sector, where the Annual Business Inquiry is used. Because the corporation tax estimates therefore rely on strong assumptions regarding the relationship between wages and profits, these estimates have to be treated with considerable caution. Other taxes are allocated by applying shares to relevant UK Public Sector Finance Statistics. These shares derive from a number of sources such as the Expenditure and Food Survey, Driver and Vehicle Licensing Agency etc. While there will be significant margins of error associated with the estimates, it is difficult to see how they can easily be improved, since only the local property tax, which is known as the council tax, is collected within Scotland.

The most controversial aspect of the revenue side is North Sea Oil and gas. Companies operating in the North Sea, after deductions for exploration and development costs must pay royalties of 12.5 per cent of gross revenue, petroleum revenue tax of 50 per cent on field-based profits and an effective corporation tax of 50 per cent. Total revenue was £9.1bn in 2006-07, driven upward by a rising oil price. In the UK regional accounts, oil and gas revenues have been allocated to a "notional"

region – “extra-regio” - and not to specific regions on the UK mainland. This has widely been seen as a device to avoid inflating Scotland’s GDP relative to the rest of the UK.

Table 2: Tax Revenues Including and Excluding North Sea Oil: Scotland 2006-07

Tax	Yield (£m)	Share of UK	Tax	Yield (£m)	Share of UK
Income tax	10338	7.32%	Inheritance tax	228	6.30%
Corporation tax (excl North Sea)	3019	8.13%	Vehicle excise duty	400	7.78%
Capital gains tax	308	8.08%	Non-domestic rates	1833	9.21%
Other taxes on income and wealth	248	8.29%	Council tax	1812	8.11%
National insurance contributions	7464	8.20%	Other taxes and royalties	492	8.25%
VAT	7449	8.49%	Interest and dividends	628	9.94%
Fuel duties	1958	8.30%	Gross operating surplus	2757	12.28%
Stamp duties	686	5.12%	Rent and other current transfers	403	22.24%
Tobacco duties	981	12.04%			
Alcohol duties	768	9.70%	**Total current revenue**		
Betting and gaming and duties	95	9.89%	**(excluding North Sea revenue)**	42353	8.29%
Air passenger duty	94	8.45%	**North Sea revenue**		
Insurance premium tax	195	8.46%	(Geographical share)	7563	83.34%
Landfill tax	75	9.09%			
Climate change levy	73	10.49%	**Total current revenue**		
Aggregates levy	50	15.43%	**(including North Sea revenue)**		
			Geographical share	49915	9.60%

Source: Government Expenditure and Revenue in Scotland 2006-07

In contrast, GERS now allocates oil revenues to Scotland in its revenue account. These are based on an “illustrative geographic share”, which follows the “median line” principle to allocate the sea bed of the North Sea between Scotland and the Rest of the UK. A precedent was set in 1999 by the use of this approach to demarcate fishing rights. Its application results in around 75 per cent of oil and gas production and 83 per cent of revenues being allocated to Scotland. These are included in Table 2.

One issue not previously discussed in relation to North Sea Oil revenues is whether these “taxes” are “shifted”. There must be at least partly true. Oil and gas are traded internationally and demand for these products is relatively inelastic. Producers can therefore relatively easily shift the tax burden to consumers who are implicitly paying a form of excise tax. Ruggieri (2008) argues that if one takes tax-shifting into account, any excess of the domestic royalty over the world royalty should be allocated to the region of consumption rather than to the region of production.

After the expenditure and revenue sides have been estimated, the net fiscal balance can be calculated. Following UK practice, GERS now breaks these down into current and capital

components. Estimates for the period 2002-03 to 2006-07 are shown in Table 3. It shows that, excluding North Sea Oil, Scotland had a substantial deficit of £6.7bn on its current budget in 2006-07. This nominal deficit has been reasonably stable since 2004-05. Including a geographical share of North Sea Oil revenues transforms this deficit into a surplus of £0.8bn, implying that the aggregate revenue streams more than covered public services consumed. However, debt interest payments, which are included in the expenditure account, actually relate to past public consumption. In addition, the expenditure account includes a payment for depreciation to cover capital consumption.

The capital account provides estimates of net investment, the benefits of which will accrue to future generations. Gross investment less depreciation in 2006-07 was £3.5bn in 2006-07 and has almost doubled since 2002-03. This leaves Scotland's overall (current plus capital) net fiscal position in deficit of £2.7bn. If North Sea Oil is excluded from the calculation, the deficit would rise to £10.2bn. If Scotland were an independent country with same tax and expenditure policies as at present, these estimates of the fiscal deficit would correspond to Scotland's net borrowing requirement. The likelihood of policy invariance across constitutional arrangements is very low. It is therefore difficult to infer an independent Scotland's future fiscal balance from a balance estimated with Scotland as part of the UK.

Table 3: Current and Capital Fiscal Balances

CURRENT BUDGET	**2002-03**	**2003-04**	**2004-05**	**2005-06**	**2006-07**
Current revenue					
Excluding North Sea revenue	32,664	34,760	37,263	39,854	42,353
Including North Sea revenue (geographical share)	36,896	38,282	41,591	47,985	49,915
Current expenditure	36,036	39,062	40,587	43,046	45,317
Current expenditure accounting adjustment	1,662	1,593	2,063	2,222	2,367
Capital consumption	1,117	1,174	1,202	1,298	1,395
Balance on current budget					
(surplus is positive, deficit is negative)					
Excluding North Sea revenue	-6,150	-7,069	-6,589	-6,711	-6,726
Including North Sea revenue (geographical share)	-1,918	-3,547	-2,261	1,420	837
CAPITAL BUDGET					
Capital expenditure	2,877	2,870	3,486	3,910	4,579
Capital expenditure accounting adjustment	136	121	177	297	305
Capital consumption	-1,117	-1,174	-1,202	-1,298	-1,395
Net Investment	1,895	1,817	2,461	2,910	3,489
Net Fiscal Balance (surplus is positive, deficit is negative)					
Excluding North Sea revenue -	8,046	-8,886	-9,050	-9,620	-10,215
Including North Sea revenue (geographical share) -	3,813	-5,364	-4,722	-1,490	-2,652

Source: Government Expenditure and Revenue in Scotland 2006-07

Table 4 expresses the aggregates shown in Table 3 for 2006-07 as shares of GDP alongside the equivalent shares for the UK as a whole: it thus makes a comparison of the fiscal stance of a state with full macroeconomic powers and a component nation with limited powers to manage its

economy. If oil revenues are included in the calculations of both government receipts and GDP in Scotland, then the overall public sector accounts for Scotland and the UK as a whole are broadly similar. The main difference is that Scotland has a slightly lower share of current expenditure and higher share of net investment than does the UK as a whole. This might suggest a greater commitment to intergenerational equity in Scotland. However, if oil is excluded, the Scottish account is much less healthy, with current expenditure accounting for more than 45 per cent of GDP and a net fiscal deficit of 9.7 per cent of GDP. North Sea Oil makes a substantial difference to Scotland's fiscal stance.

Table 4: Current and Capital Budgets 2006-07 UK and Scotland

	Scotland with oil (%)	Scotland without oil (%)	UK (%)
Current Budget			
Current receipts	39.2	40.2	39.2
Current expenditure	37.5	45.2	38.3
Depreciation	1.1	1.3	1.3
Surplus on current budget	0.6	-6.4	0.4
Capital budget			
Gross investment	3.8	4.6	3.3
Less depreciation	-1.1	-1.3	-1.3
Net investment	2.7	3.3	2
Net Fiscal Balance	-2.1	-9.7	-2.3

Sources: Government Expenditure and Revenue in Scotland 2006-07 and HM Treasury, Comprehensive Spending Review 2007

5. Conclusion and Discussion

This paper has examined fiscal relations within the UK. Devolution of power in the UK is both asymmetric and relatively weak in terms of the fiscal powers available to sub-national governments. Central government (HM Treasury) has almost complete control of taxation. Spending ministries in England allocate resources to local service providers, such as local authorities, using complex mechanisms that are intended to reflect differences in need and in the cost of service provision. Sub-national governments cannot issue debt to any significant extent. The UK is characterised by substantial vertical fiscal imbalance: it cannot be reasonably argued that revenue raising powers and spending responsibilities are reasonably balanced.

Scotland, Wales and Northern Ireland receive allocations that are based on the Barnett Formula. It is a simple device that does not reflect differences in "need", but may be considered as a mechanism that delivers side-payments to deflect secessionist threats, particularly in Scotland.

There is no overall evidence that these idiosyncratic fiscal mechanisms effect have strongly redistributive effects at the regional level: the main redistributive mechanisms are funded and administered by central government and operate almost completely independently of sub-national governments.

Data on inter-regional fiscal flows are poor, though improvements have been made in recent years. These have largely been confined to the geographically identifiable components of expenditure. The main element that is missing is data on revenue raising in all parts of the UK other than Scotland. The absence of such data perhaps reflects the lack of political support for revenue raising powers, particularly in the regions of England.

Scotland has reasonably good quality data on fiscal flows, following publication of the latest edition of GERS. They have the advantage of being consistent with a number of UK national accounts aggregates and international accounting conventions. Decomposition of the data into current and capital accounts provides an inter-temporal perspective on the data that was not previously available. However, the estimates are subject to error, particularly on tax revenues where the data are based on estimated shares of relevant UK tax receipts.

For Scotland, the GERS data shows that its net fiscal balance was broadly similar to that of the UK as a whole in 2006-07, provided that North Sea Oil revenues are allocated to Scotland. However, it is difficult to draw conclusions about independence from this information since an independent Scottish government would be unlikely to mimic the UK's current fiscal structure.

Ultimately it is clear that the provision of data on inter-regional flows in the UK is closely linked to politics. Local politicians campaign for spatial equity across the component parts of the UK, contingent on the current constitutional settlement. Interest in these data is also closely linked to the strength of nationalist movements, particularly in Scotland and Wales. It appears that the nations other than England may have been the beneficiaries of a "union premium" – a higher level of public resources than a dispassionate social planner would award – as an implicit mechanism to stabilise the Union.

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