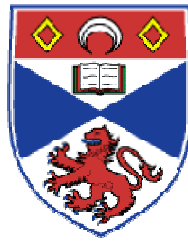


CENTRE FOR DYNAMIC MACROECONOMIC ANALYSIS
WORKING PAPER SERIES



CDMA10/09

Scotland: A New Fiscal Settlement

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30 MARCH 2010

Keywords: Tax and Expenditure Devolution, Inter-Government Relations, Fiscal Federalism, State Budget, Fiscal Coordination.

JEL Classification: H71, H74, P43, E61.

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Executive Summary

Many commentators have criticised the strategy currently used to finance the Scottish Parliament – both the block grant system, and the small degree of fiscal autonomy devised in the Calman report and the UK government's 2009 White Paper. Nevertheless, fiscal autonomy has now been conceded in principle. This paper sets out to identify formally what level of autonomy would be best for the Scottish economy and the institutional changes needed to support that arrangement. Our conclusions are in line with the Steel Commission: that significantly more fiscal powers need to be transferred to Scotland. But what we can then do, which the Steel Commission could not, is to give a detailed blueprint for how this proposal might be implemented in practice.

We face two problems. The existing block grant system can and has been criticised from such a wide variety of points of view that it effectively has no credibility left. On the other hand, the Calman proposals (and the UK government proposals that followed) are unworkable because, to function, they require information that the policy makers cannot possibly have; and because, without borrowing for current activities, they contain no mechanism to reconcile contractual spending (most of the budget) with variable revenue flows – which is to invite an eventual breakdown. But in its attempt to fix these problems, the UK White Paper introduces three further difficulties: new grounds for quarrels between the UK and Scottish governments, a long term deflation bias, and a loss of devolution.

This paper makes five new contributions:

- 1). It provides the intellectual case for fiscal autonomy in Scotland, and examines explicitly how far autonomy should go. We conclude more autonomy is better than less in terms of improving Scotland's economic performance.
- 2). It provides a blueprint for how the tax system could be devolved, and explains why.
- 3). It details the institutional arrangements necessary to support such a regime and specifies how they might work. Specifically we look at mechanisms that limit public debt, and provide a blueprint for how they might be implemented to ensure credible fiscal policies.
- 4). Fiscal autonomy trades efficiency and better economic outcomes against spreading adverse spillovers or tax competition to other regions in the UK and a possible lack of discipline. We show how fiscal autonomy can be set up in a way that is consistent with the UK macro-economic framework, and also consistent with EU rules on economic policy and state aid.
- 5). Given this framework, we can make rough calculations of how much autonomy is worth in terms of increased growth and jobs (every 1% of the budget transferred to Edinburgh could potentially increase incomes per head between 1.3% and 0.6%); and what effect income tax differentials would have on skilled in-migration (fairly small: a few thousand per 1% differential in income tax rates).

Under our blueprint, the Scottish budget for 2007-08 would have been in a strong position and stronger than the UK as a whole, being close to balance or in a small surplus. By contrast, the UK would have had a deficit effectively unchanged at 3% of GDP for that year.

Many of these themes have been touched on in previous papers: in the Steel Commission in particular; but also by the Calman Commission, and the Irish and Scottish Home Rule bills of 1913. But none have given the detailed arguments upon which the design of a devolved system needs to depend, and none have given a blueprint of how it could be implemented. Our proposal sets out to achieve three specific properties: full accountability for Scottish policymakers, greater economic efficiency and performance, and a settlement consistent with preserving a social union. We are therefore operating within two constraints: that Scotland remains a constituent part of the UK, and that our proposal must be consistent with EU legal requirements.

This means we have set up a system in which there are advantages to both sides, most obviously in better risk sharing and performance gains for both Scotland and the UK. Other regimes are more risky, and cannot exploit the advantages of local information and policies designed to match local conditions. Our proposal is not a contest between challengers, but a better way to manage cooperation within the UK framework. It is not a zero sum game.

The main features of our proposal are:

- Extensive fiscal autonomy is required to provide the levers need to guide the Scottish economy and improve its performance;
- Extended fiscal autonomy is the only arrangement consistent with increasing political and economic accountability for Scottish policymakers;
- Competence to set not only all devolved tax rates, but also all aspects of those taxes (bands, base, exemptions);
- Borrowing powers are necessary to manage the economy while observing stability conditions for the UK debt level as a whole;
- Reserved powers (tax and spending) to be limited to those with no significant economic consequences locally but important for the UK as a whole, and certain policies with development or infrastructure (physical and non-physical) implications;
- Reciprocal remittance arrangements to pay for the reserved policies;
- Limited equalisation payments via a fund linked to economic capacity, not incomes;
- Addressing potential problems of tax competition, fiscal coordination and reliable debt management are a key feature of our blueprint;
- Certain institutional changes will be necessary (a fiscal policy commission, a Scottish Treasury and/or tax service, a UK policy forum/monetary fund).

Chapter 1: Introduction

In the past we, among many others, have been critical of the ways in which the Scottish Parliament has been funded – whether via the block grant system or through the proposed implementation of a limited degree of fiscal autonomy advocated in the Calman report and the UK government’s White Paper of 2009.¹ But now that the principle of fiscal autonomy has been conceded, it would be more useful and constructive to review what can be suggested as a more appropriate funding mechanism and what institutional changes need to be made to support that mechanism.

To be specific, we face two problems. First, the existing block grant system based on the Barnett funding formula (and probably any other block grant system) can be criticised from such a wide variety of points of view that it has effectively no credibility. It would be no exaggeration to say that it has no political or administrative friends left.² On the other hand, the new suggestions of a limited degree of fiscal autonomy based on a Scottish income tax and a proportionately reduced block grant is an ambiguous compromise that is extremely difficult to implement and has enough defects and potential contradictions as to satisfy no one, if not cause endless quarrels. The second problem is that Calman’s proposals are unworkable as they stand³ because, to operate, they require information that the policy makers cannot have (future tax revenues); and because, without borrowing for current activities, they contain no mechanism to reconcile contractual spending (95% of the budget) with variable revenue flows – implying an eventual break down is unavoidable. But in an attempt to fix these problems, the White Paper has introduced further difficulties: by apportioning of taxes by forecasting formula; a deflationary bias; with any unanticipated revenue growth going to the UK government (not Scotland); and a loss of devolution. This paper sets out to find if there is a better model of fiscal devolution without those drawbacks.

Although drawing on our earlier critiques of both the current arrangements and Calman style reforms currently under review, the proposals set out in this paper are in fact more closely related to the conclusions reached by the Steel Commission in its report of March 2006. While the Steel Commission did not specifically endorse fiscal autonomy for Scotland, it did convincingly set out the economic and constitutional arguments in favour of a radical overhaul to the current financing arrangements and that significantly more fiscal powers should be transferred to Scotland’s administration. As argued in that report:

“Transferring substantial revenue-raising authority to the Scottish Parliament should enable future Scottish Governments to have a free hand in developing policies which will

¹ ‘Scotland’s future in the United Kingdom: Building on ten years of Scottish devolution’, Cm 7738, Nov. 2009.

² The House of Lords Select Committee report on the Barnett Formula (July 2009) provides the evidence for a more comprehensive critique of the Barnett arrangements.

³ Scott and Hughes Hallett (2010), Cuthbert and Cuthbert (2010); see the discussion in section 3 for the reasoning behind these statements. If these issues are not resolved, the Calman proposals are likely to prove unsatisfactory to all and, paradoxically, to threaten the union – the very outcome the Calman Commission wished to avoid.

stimulate growth in the Scottish economy and remove the democratic deficit which follows spending powers without revenue raising responsibility.”⁴

We contend that the objectives identified by the Steel Commission are achievable, but that this requires a decisive shift towards fiscal autonomy for Scotland’s government. One of the defects in the current debate is that the understandable focus on the financial accountability of the Scottish Parliament has resulted in us losing sight of the key role that fiscal policy plays in stimulating economic growth, and that Scotland’s government needs to have substantial competence over tax and spending policies in order to maximise Scotland’s growth rate – particularly in a period of economic downswing whose legacy could last for a great many years. As the Steel Commission suggested, the case for a comprehensive transfer of fiscal policy competence to Scotland’s devolved government rests on this argument just as much as it does on enhancing Parliamentary accountability for its spending decisions.

In setting out our proposals we take as our starting point the presumption that any revised regime therefore has to meet three basic criteria. *First*, it has to be consistent with economic stability. *Second*, it must ensure comprehensive financial accountability on the part of the Parliament. *Third* it must provide the Scottish government with the economic levers necessary to maximise the growth rate of the Scottish economy. Our contention is not only that the model of fiscal autonomy we elaborate below meets each of these criteria, but that the current reforms proposed by the UK Government are equally likely to undermine each of these objectives with damaging economic consequences for both Scotland and the UK.

We are of course conscious that critics will say that our model of fiscal autonomy has no parallel in any country presently operating a decentralised, or federal, fiscal regime. This is not true: each of the features we introduce has its parallel in another country or in history. Equally, of course, there is no example of a fiscally decentralised country operating a system of financing sub-national governments comparable to the current UK arrangements, or indeed the revised (Calman-inspired) financial arrangements proposed by UK Government. In fact virtually all of the elements of our proposed arrangement are taken from current “fiscal federalist” practices across a range of jurisdictions. And in response to those criticising our proposal on this basis, we stress that our proposal addresses the feasibility and practicality of implementing fiscal autonomy for Scotland in the context of the UK in three senses. First, we demonstrate the *administrative* feasibility of fiscal autonomy; second we demonstrate its *economic* feasibility; third we demonstrate its *legal* feasibility.

Past experience suggests that critics of our proposals will focus on the constitutional implications rather than its economic merits. A particular challenge that might well be raised is to distinguish in practical terms between our model of fiscal autonomy and outright

⁴ The Steel Commission; ‘Moving to Federalism – A New Settlement for Scotland’, March 2006

independence. In our view fiscal autonomy should not be regarded as a “stage” on the route to constitutional independence. Instead it is an opportunity for reforming the fiscal powers and responsibilities of a devolved Scottish administration within the context of the United Kingdom. And this, in our view, is an option that is entirely consistent with maintaining intact a wider UK monetary, political and social union and with retaining the singularity of the United Kingdom on the international stage.

Certainly we accept that our fiscal policy proposals are radical when viewed alongside those of the Calman Commission which form the basis of the UK White Paper. However when viewed against the fiscal policy assignments that are commonplace in a number of federal countries our proposals are far from radical. Moreover there is no prospect whatsoever that, if enacted, the proposals for limited tax devolution advanced by UK Government will enhance the economic powers of Scotland’s devolved government and thereby better equip it to tackle the extremely serious economic problems we confront. Indeed, as we show, those reforms are actually likely to make matters worse and that, rather than our proposals, may present a far greater challenge to the integrity of the union in the long run. Fiscal autonomy, by contrast, would provide a devolved government in Scotland with an array of economic policy instruments, including those affecting the labour market, which can make a serious difference to Scotland’s economic performance.

We are also aware that we are proposing fiscal autonomy as we enter a period of unusual fiscal austerity. Fiscal autonomy will not allow Scotland to avoid her share of fiscal adjustment as the UK addresses its budget deficit and high level of public debt. Fiscal “belt-tightening” will be a feature of the UK economic landscape over the foreseeable future, and Scotland cannot escape her share. However what fiscal autonomy does do is to permit Scotland’s government to ensure that the tax and spend decisions it is required to take are consistent with the specific needs of, and conditions facing, the Scottish economy. And, of course, it will locate responsibility and accountability for the hard fiscal policy choices to come where it should belong – in the Scottish Parliament. That said, the fiscal regime we propose is intended for the long term and must therefore be designed to work well in more normal circumstances.

Chapter 2: What Are Our Options?

There are three criticisms of the current fiscal settlement, which is a block grant system based on the Barnett formula. First, it can be criticised on political grounds (McLean et al, 2008) for delivering an inequitable and largely arbitrary allocation of spending; and for being procedurally unfair in that it is based entirely on events and spending levels outside the region being funded, without any input by the Scottish Parliament. It therefore commands little political support

Second, it can be criticised on institutional grounds. It is not transparent; few people understand how the grant is calculated, and the calculations contain many judgments made by Treasury officials that are not made public and which may be reversed. It does not provide accountability: politicians in Holyrood are accountable for the distribution of spending, but not for its size; and those who determine the size of the grant are not accountable to anyone outside Whitehall.⁵ And it makes no attempt to align the incentives of the decision makers with public preferences or the needs of the economy in terms of development, stability or growth⁶.

Third, it can be criticised as a means of economic management. It fails to supply any risk sharing properties (important for any economy in a currency union). It fails to redistribute resources for development and investment; the calculations reflect only the devolved functions in a system designed to achieve equity in public spending/consumption per head.

To meet these criticisms, we need to find a funding scheme that has both political and economic legitimacy; that is, one seen to be procedurally fair, transparent and equitable in terms of needs; that commands political support; that can be monitored and evaluated easily; and that is effective in reaching Scotland's economic and social objectives.

a) Four Possible Fiscal Regimes (these regimes are discussed in detail in Annex A):

1. **Block grants:** as now, with grants from London determined by a formula similar to Barnett – but made transparent, accountable, and based on the needs of the economy.
2. **Assigned taxes:** some or all taxes that arise in Scotland are assigned to Scotland, the remainder to central government. Unless that government gives a top-up grant or operates an inter-regional equalisation scheme, expenditures must match revenues on the Scottish budget. This makes it possible to choose what proportion of tax or spending is devolved, and what proportion reserved, *on average*. However, because future tax revenues are always uncertain, neither these proportions, nor the ability to maintain a balanced budget, can be guaranteed in any one year. The tax rates in assigned taxes are typically chosen centrally, but can be devolved. A variant is **apportioned taxes**. To avoid having to monitor exactly how much of each tax arises in Scotland, a specified proportion of each UK tax is awarded to Scotland. Either variant is just a different kind of block grant, but calculated according to some formula based on tax codes.

⁵ Taylor (2008)

⁶ MacDonald and Hallwood (2009)

3. **Partial fiscal autonomy:** a form of fiscal devolution in which the UK and the Scottish authorities first agree which taxes and expenditures are to be devolved and which are to be reserved. Then the Scottish authorities decide the tax and expenditure rates to be applied to their part of the system. In this case the Scottish budget may not be balanced; but automatic transfers between regions are both possible and likely, which limits the size of any imbalance.⁷ In effect the two governments must choose what proportion of tax and spending should be devolved, and what proportion reserved for the central government.
4. **Full fiscal autonomy:** full tax and expenditure devolution within a full political union. In this case the Scottish authorities choose all tax and expenditure rates (including the tax bands, the tax bases and exemptions); and it extends devolution to include social security, unemployment benefits, sales taxes, corporation tax, other business taxes, carbon taxes and so on. But, because there is no connection to a central budget, *except* in so far as Scotland may agree to pay for certain functions to be performed by the centre, there are no fiscal transfers between the upper and lower levels of government or between regions.

Evidently, given this taxonomy, the Calman proposal to create a Scottish rate of income tax takes us into the realm of fiscal autonomy, although its implementation in the UK government's white paper takes a step backwards by apportioning the revenues and reassigning accountability back to London (demonstrated in Chapter 3 below). Nevertheless the principle of fiscal autonomy has now been conceded. The remaining question is therefore: what form of autonomy is best?

b) Qualifications: the compromises involved in choosing between regimes

Before reviewing the options open to Scotland, let us note some important qualifications. First, any of these financing schemes can come in hybrid form – combining a grant with assigned taxes for example, or partial fiscal autonomy with a grant mechanism. Annex A shows two important trade-offs are involved in the choice between these variations. First, there is a difference between long run financial redistribution towards a particular region, and short term discretionary transfers to/from or between regions for the purposes of stabilisation. Some authors refer to the former, driven by different transfers between upper and lower levels of government, as flows designed to achieve a better measure of *vertical equalisation*; and to the latter (reversible transfers between regions) as achieving *horizontal equalisation*.⁸

Second, addressing horizontal imbalances reflects a concern for within region equity and hence regional stability. By contrast, countering vertical imbalances is to redistribute between regions in order to achieve greater inter-region equality. These two objectives are not the same:

⁷Both horizontal and vertical transfers: if the centre chooses to run a deficit larger than the surplus on the regional accounts, there will be a vertical transfer to the regions as a group but not to any specific region. This could be temporary, or a permanent arrangement. Similarly if the regions are at different points on the cycle, or subject to different shocks or structural responses, there will be indirect transfers horizontally between them: see Annex A.

⁸Equalisation describes a process whereby financial imbalances between “regions” in terms of their respective tax bases (and own source revenues) on the one hand, and spending obligations on the other, are corrected by financial transfers either from central government (vertical equalisation) or from other regions (horizontal equalisation).

there may be a choice between helping a region with lower average incomes but little inequality, and a region with higher incomes on average but pockets of genuine poverty. So inter-region equality is not the only criterion at stake, and the choice of one financing rule over another will usually favour one criterion over the other. A region may prefer to forego inter-regional equality for a system that delivers a better economic performance internally.

Next, any discretionary transfers will suffer perverse incentives: net donors resent the extra financial burden, and recipients suffer from the disincentives of free-riding and dependency. Thus there will be distortions and inefficiencies whichever scheme is chosen. But some schemes are better than others: the distortions will be smaller, inefficiencies lower and political support firmer if the transfers are temporary and may go in both directions.

Third and most important, the need for fiscal discipline, and new institutions to provide the necessary support, varies between regimes. Many countries have had to resort to special rules or an independent agency to limit debt, enforce discipline and monitor its fiscal deficits

c) Compliance with EU rules on state aid: Formally, the EU has no powers over state or regional tax policies that take the form of direct taxation. However sub-state tax powers become a state aid question, and thereby fall subject to EU law, if (a) sub-state tax authorities set tax rates or tax bases that diverge from the national level *and* (b) the central government operates a non-discretionary expenditure equalisation scheme by direct transfer in order to make good any sub-state shortfall in revenues raised by local taxation⁹ (shortfall in this case meaning a sufficient subvention to permit the regional government to finance obligatory spending programmes to which citizens are entitled under national rules). If both conditions are met, as happened in the Azores test case, the European Commission has the right to intervene (under Article 87, state aid rules) to prevent sub-state authorities from lowering the rates of direct tax in their jurisdiction, even though that sub-state authority is acting correctly within the terms of its domestic constitution. In such a situation, the Commission considers the equalisation transfers to be state aid because they permit the costs borne by employers or employees in that region to fall (thereby making them more competitive) with the consequential public revenue shortfall being made good by a direct financial transfer from central government.

At present, there is no conflict between UK arrangements for funding devolved government and EU state aid rules because the Barnett formula is judged not to be an equalisation transfer *and* because all taxes are currently raised at national rates. But that could change if tax rates were to be set in Scotland. Informal opinions from the European Commission and European Court of Justice have suggested that the Calman proposals would not create a conflict, largely because the proposals limit tax varying powers to income tax rather than corporation tax. However if Scotland were to acquire competence over corporation tax much closer attention would be given to the basis on which any financial transfer from UK to devolved government was made.

⁹It is this condition which makes the UK rather than Scotland the relevant reference area for questions of state aid.

An interesting possibility is that regional governments might be allowed to vary the tax rates under their control, provided they do so in a way that doesn't create (significant) tax competition: for example, by lowering one tax rate, and raising another, so that tax rates are not affected on average. In Spain, regional tax autonomy has usually been accompanied by agreements between the national and sub-state governments to set their taxes in a way that prevents intra-state tax competition. That might allow a regional government to set the rate of a local income or corporation tax, if it were compensated by agreed changes in other local or national rates; *or* if it could be argued that the regional deviations from the national average were small enough not to cause material tax competition (the rationale behind opinions on the Calman proposals).

d) The relevant economic space issue: The recent EU ruling on regional tax rates in the Basque region for Spain confirms that changes, even if not so small, may be permitted in certain cases. The autonomy test which defines whether a regional government can vary its (business) tax rates below those used elsewhere in the union is three-fold:

- (a) The decision to vary the tax rate must be taken by a regional authority which has, from a constitutional perspective, a political and administrative status separate from the central government;
- (b) The decision must be taken without any intervention from central government, or with a view to influencing central government;
- (c) The financial consequences of lowering tax rates below those applying elsewhere in that state must be borne entirely by the regional government, and not offset by financial aid or current account subsidies from other regions or central government.

Given that any tax rate we might be considering will be devolved, the third condition is the one that matters here. It implies that any transfers or payments from other regions or from the central government must be temporary, reversible and automatic. So they cannot be systemic, or needs driven equalisation payments. However, they could be capital payments for investment purposes: for example in infrastructure, or research and knowledge, or projects with joint payoffs, or payments needed to preserve the social union, and so on. We have designed our grants council mechanism below, with vertical and horizontal payments, with these restrictions in mind.

To secure this arrangement, the Scottish government would have to conclude a formal Economic Partnership agreement with the UK that defines Scotland as the relevant economic space for the purposes of European state aid rules, and to establish that nothing that the Scottish government decides would systematically affect any UK tax or spending decisions.

Summary

- Any funding arrangement for the devolved Scottish administration *other* than fiscal autonomy will continue to involve grant-based financial transfers from UK Government. As such it will necessarily involve some degree of non-accountability on the part of the Scottish Parliament for raising the sums it spends, while incentivising the Government to

maximise spending of that element of its revenue regardless of economic efficiency considerations;

- The extent to which tax devolution effectively can occur under a model of partial fiscal autonomy is limited because any combination of grant-based transfers from UK Government and the use of tax powers assigned to the Scottish Parliament must be compliant with EU state aid law. In practice, as the case law of the European Court of Justice demonstrates, this imposes strict limits on the use of tax varying powers by the devolved government should it continue to rely on financial transfers from central government. These limits are avoided under fiscal autonomy;
- Full fiscal autonomy will transfer to the Scottish Parliament competence over all taxes levied in Scotland (including matters relating to tax bands, tax allowances, and the tax base) with the exception of VAT. EU state aid rules means that there will be very limited scope for discretionary UK-wide vertical or horizontal transfers of funds under fiscal autonomy.

Chapter 3: Calman and the UK White Paper, current proposals for tax devolution¹⁰

The chief idea in the Government White Paper ‘Scotland’s Future in the United Kingdom’, and in the Calman Commission report which preceded it, is to reinforce the Scottish Parliament’s financial accountability (and, by extension, responsibility) to the Scottish electorate. Specifically, its stated purpose is to strengthen financial accountability in the Scottish Parliament by endorsing Calman’s central proposal to create a Scottish rate of income tax set at one-half of the UK rate. Thus the focus is on accountability in a strictly national accounting sense, not on accountability for a better economic performance.

The White paper has a specific mechanism in mind. Each of the existing UK income tax rates will be divided between a Scottish rate and a UK rate, but the tax bands will remain as they are. The Scottish Parliament will be asked to levy the Scottish segment of income tax at a rate of its own choosing, with the remaining segment levied by the UK Treasury at one-half of the UK rate. This will apply to both basic and higher rates of income tax, although subsequent interpretations have dropped this commitment to keep the UK component at half the UK rate in the higher tax bands in favour of a declining Scottish part in the upper bands. The receipts *projected* by the UK Treasury to arise from this Scottish income tax will be deemed Scotland’s “own resources” and credited to the annual block grant, while the receipts which could have been expected from Scottish income taxes levied at half the UK rate (instead of at the Scottish rate) will be subtracted from that grant. This redefined grant will then finance public spending in Scotland. The *actual* receipts from the Scottish income tax will therefore flow to the UK treasury just as before. The underlying grant, before the addition of the Scottish taxes and subtraction of notional Scottish taxes at half UK rates, will be calculated according to the Barnett formula as it has always been. Thereafter, in subsequent years, Scotland’s revenues will be increased by the net annual Barnett cash uplift applied to a “proportionately reduced” block grant without Scottish taxes or the projected yield from the Scottish rate of income tax. However the proposals are very vague at this point. On other interpretations, the cash uplift will be applied to the original Barnett formula grant, with the additions and subtractions for the projected yield and notional Scottish income tax elements performed independently each year. We take this second interpretation to be more likely. It is the only one consistent with the aim of continuing to impose accountability and responsibility constraints on Scottish policymakers after the first year.

Finally the White Paper does not indicate by how much the current block grant would be reduced before the Scottish “own resource” taxation is added back in, but current estimates indicate about 15% of Scotland’s current block grant is at stake (or roughly 11% of Scotland’s total revenues).

This is a complicated procedure, and may lack transparency for outside observers and for Scottish policymakers. Moreover the shift from actual tax revenues to projected revenues will

¹⁰ This section contains an abbreviated version of our evaluation of the UK government’s current proposals for fiscal autonomy and their consequences for the Scottish budget: see Scott and Hughes Hallett (2010) for greater detail.

inevitably shift accountability back from policymakers to the tax forecasters – the UK Treasury in this instance. As a result, it creates an open invitation for quarrels and disputes. However it is the practical implementation difficulties that have caused this shift from a comparatively simple idea in the Calman report, to the more complicated mechanism of the White Paper. The drawbacks that follow are the inescapable result of compromises that have to be made when a limited mechanism of this kind meets the practical difficulties of implementation within an existing framework. That suggests a different type of mechanism is likely to work better for both parties.

The White Paper's immediate changes

The feature which distinguishes the White Paper proposals from Calman's original model is that the "own resource" component will be determined on the basis of a Treasury *forecast* of the yield from the application of a Scottish rate of income tax, not the *actual* yield. There is no provision for the forecast yield and the actual yields to be reconciled and the appropriate financial adjustments made. This implies around 15% of Scotland's revenues would now depend on the quality of a Treasury forecast with no compensation for errors. One does not have to be a historian to appreciate the limitations of economic forecasts. And what if the Scottish Government's forecasts of the level of Scottish economic activity differ from the Treasury's? There are many independent forecasters (at least four for Scotland), and the forecasts made for the UK by the Treasury have frequently been disputed and often proved wrong.

Thus, this proposal is likely to confront the Scottish government with considerable uncertainty with respect to future revenues and economic performance upon which those revenues depend, and (not least) the uncertainty of what the forecasts will say and therefore grant to Scotland. It is in the nature of things that forecasts are never fully correct. And if the Scottish Parliament then tries to use its tax powers, more problems arise. For instance, suppose that Scotland's parliament decides to reduce the Scottish rate of income tax to 9p on the assumption that this will attract business and increase work effort – and hence increase total income tax receipts in Scotland. With lower rates of income tax, businesses can expand and new workers enter the labour force, and existing workers can be expected to work harder as they will take home a higher share of their earned income. On that basis total income tax receipts in Scotland are likely to rise, with one-half going to finance higher Scottish public spending if the Treasury gets its forecast right. The UK Government will enjoy the other half. But what happens if the Treasury economists are working under different assumptions; that a cut in Scotland's rate of income tax would *reduce* tax receipts? That is entirely possible. In addition to an immediate fall in revenue when the tax rate is cut, the Treasury could easily argue that Scotland's output and employment will fall further since workers can now work *less* hard than before and still take home the same pay. If it then turns out that the Scottish government was right, *all* the extra revenues generated by the growth generated by the Scottish tax cut would accrue to the UK, not to Scotland, since the UK gets the actual revenues while Scotland is allocated the Treasury forecast.

Hence, depending on the assumptions built into the forecasts, one can produce two quite different projections from the same tax change. For example, do the Treasury economists actually know whether the income effect in the income-leisure trade off dominates the substitution effect; or whether the substitution effect dominates the income effect? One can be pretty sure that they do not, at least not for Scotland, since Scottish national accounts data needed to make the necessary calculations do not exist. The way out of course is to use forecasts that do not depend on assumptions on Scottish variables beyond the tax rate: as shown in Annex B.

Thus, the problem facing a Scottish Government seeking to use its income tax powers to boost growth is that it will have to first convince the Treasury economists that its assumptions are correct. But faced with the uncertainty (and lack of transparency) in the Treasury forecasts, it is highly unlikely that any Scottish Government would ever risk using its new tax powers. To minimise the risk of losing income, because Treasury assumptions appear to dictate that, or of giving it to someone else if the Scottish assumptions prove to be correct, the best strategy is to stick with the higher tax rate. In other words, the unused 3p variable rate has been replaced with an unusable 10p variable rate.

Finally it is worth calculating what these arrangements would mean for revenue flows to the Scottish Parliament. If the new tax revenues are to fill the gap created by the reduction in the block grant, Scottish incomes (which determine her income tax revenues) must grow at least as fast as UK public spending (which is what determines the annual uplift to the block grant). This has not happened for a long time. Over the period 2000-2008, data on the growth of UK public spending and Scotland's GDP show that public spending growth in the UK has outstripped the growth in Scottish incomes by an average of 0.21% per year. This implies a gap that gets larger by an additional £81m in revenue lost to the Scottish government each year, cumulating to £1.2bn lost after 5 years¹¹. Thus, if the Scottish government wants to restore lost funds and lost spending, it will be forced to raise income tax rates *every year* – by 0.21p in the pound, or by 1p every 5 years, just to keep pace with the rest of the UK. It is not hard to predict the effect of that on business conditions, on living standards and the ability of the Scottish economy to grow and create jobs.¹² These proposals therefore come at a cost: those who depend on frontline public services are going to pay a very steep price for a little extra accountability.

It is also possible that the fiscal policy proposals in the White Paper were never intended to be used. In fact, perhaps that *is* the point. The objective all along may have been to reassert control by other means. Why do we say that? First, because no Scottish government can risk using its autonomy given the added uncertainty about future revenues; second because there is no incentive to do so since any gains made that way would go to the UK Treasury, but any projected

¹¹ This gap appears to be widening rapidly: basing the calculations on 2004-08 instead, we get a gap of £479m or £7.2bn over 5 years, requiring tax rates to rise by 5p every 5 years to maintain parity.

¹² On top of this, HMRC has to identify those people who should pay Scottish rather than UK taxes, said to cost another £50m per year. These two features together would therefore cost about £2bn in lost revenue after 5 years.

losses go to the Scottish government; and third, because no government would be able to take any decision before it had taken instructions from the UK Treasury on what (numerically) it would be able to do. In which case, far from restoring accountability to the Scottish people, the White Paper's proposals just restore Scottish accountability to London. We examine that proposition directly in Annex B.

Borrowing Powers:

The White Paper does little better with borrowing powers. As recommended by the Calman Commission, borrowing will not be permitted to finance current spending. A new power to borrow for capital spending is to be introduced, but it is limited. First any such borrowing has to be agreed upon by the Treasury, second it has to be accompanied by an immediate increase in the Scottish rate of income tax to generate the amount required to finance and repay the loan, and third any such borrowing is limited to one year at interest rates set by the Treasury. The Scottish government is not allowed to go to the markets as any local authority or business might do.

The ban on borrowing for current payments is likely to prove more problematic. Local authorities are subject to the same restriction of course. But their own source revenues are not subject to unpredictable variations since they are raised at known rates on fixed, known property values. Scotland's position might look similar, in that the income tax component of her revenues will come from the Treasury forecast of what the Scottish income tax rate would yield. In normal times that might not matter. But supposing the Treasury was expecting/experiencing a recession? The anticipated revenues would be downgraded and Scotland would have to make an immediate series of budget cuts, while other parts of the UK would be able to maintain their spending through the borrowing implicit in their block grants (which depend on the level of borrowing supported public spending in the UK). Similarly, if the Treasury were to under-predict revenues in a recovery, Scotland's economy and public spending would be slower to recover than the rest of the UK, and any actual recovery in revenues would go directly to the rest of the UK. These points are important for, if the current recession has taught us anything, it is that the tax revenues vary in a recession and create the need for borrowing; not spending.

In practice the Treasury's income tax forecasts for the UK have been remarkably inaccurate: over-predicting the revenues in the downturn and under-predicting them in the recovery. So the lack of borrowing powers is an important concern. There is a small provision in the Scotland Act to allow the Scottish government to borrow up to £500m within any funding year to cover cash shortfalls within the current budget. But that is very small: first because it must be paid back within the year, and second because it is too small to make a difference in the kind of recessions we are likely to encounter.

For example, we would need to borrow £500m if there were a 5% loss to incomes in a recession that lasted two years or more. In the current recession, incomes have fallen by 6% to 7% for more than two years. What would happen then? Cuts in public spending, not matched by

cuts elsewhere in the UK, would be unavoidable. Moreover those cuts would be a multiple of the original shortfall. The UK government has had to borrow 14% of national income to counter falls in income of 6%. Translating that to Scottish conditions, in the absence of noncapital borrowing, public spending on services, schools, and health would have to be cut immediately. But those spending cuts will drive a further decline in incomes and hence tax revenues, requiring a second round of spending cuts or tax rises. Ultimately, in order to restore spending, tax rates would have to rise to make up the shortfall, provoking yet a third decline in disposable incomes and hence revenues and spending.

This cycle of revenue declines, followed by spending cuts and tax increases, is unavoidable because one cannot increase taxes on demand to save the spending cuts. It takes two years: one to pass the budget change through Parliament, and one to get the changes introduced into the tax code and to bring the higher revenues in. This problem is a direct consequence of linking current government spending to *current* tax receipts under a regime in which the annual budget must be in balance – where outgoings/spending have to be matched by income/revenues year by year. If firms cannot be expected to do this, it is surely unrealistic to ask a government to do so.

Again these arrangements seem unlikely to strengthen the economic and social union in the UK, the guiding principle behind both the Calman report and the White Paper.

The proposed new power to borrow to finance capital spending is also flawed. Whilst welcoming the recognition that borrowing for capital investment purposes is a sensible power to grant the Scottish administration, the requirement that any loans raised under these provisions have to be financed out of an increase in *current* taxation is nonsensical in economic terms. Capital projects create economic benefits that accrue both to current and future generations. In efficiency terms the burden of servicing and repaying borrowings to finance such projects should therefore be distributed between current and future generations according to the corresponding flow of benefits and not imposed entirely on the current generation as the UK Government now proposes. Requiring today's tax payers to repay a loan which mainly benefits future generations is certain to *reduce* the Government's capital investment programme below a level which is economically efficient. It is difficult to see any sensible government borrowing for investment purposes under such conditions, and that is likely to mean that investment in capital and future infrastructure projects will be restricted well below what is economically desirable.

Summary

- The UK Government proposal to make 15% of the funding of the devolved Scottish administration reliant on a Treasury forecast of Scotland's income tax revenues is flawed in both economic and governance terms. It will generate significant uncertainties over future revenue flows, result in disagreements over both forecasting models and forecasts, and be non-transparent and non-verifiable;

- It would be irresponsible for a Scottish Government to use the income tax powers proposed by Calman and the White Paper unless prior advice had been taken from the Treasury on the impact any change to the Scottish rate of tax would have on Scotland's tax revenues. That impact will be determined by forecasts provided by the Treasury economic model. This undermines entirely the proposition that a Scottish administration has autonomy over the rate of income tax levied in Scotland, other than in name only;
- The absence of borrowing powers to finance spending during unexpected variations in revenues "imposed" by Treasury will require adjustments to public spending that are likely to be destabilising for the economy as a whole;
- The power to borrow to finance capital expenditure is, in principle, a welcome proposal however the specific conditions that attach to this new power are utterly flawed in economic terms. Requiring the current generation of taxpayers to finance investments that are of benefit principally to future generations of taxpayers is bound to result in capital investment being lower than is economically efficient;

Chapter 4: Our Proposal – A Blueprint for Fiscal Devolution

In this chapter we design a fiscal regime that can capture the practical advantages of devolution which are identified in greater detail in chapter 5 below, and the efficiency and economic performance gains that would then follow. In this chapter we describe how this regime would work and why.

Chapter 5 argues the intellectual case for fiscal autonomy. It shows that greater efficiency would be created by fiscal autonomy, in place of centrally chosen grants or tax assignments; by more autonomy rather than less, but with links retained to a central government budget; by maximising “own resources” to maximise accountability and to realise the gains from extra efficiency; by assigning taxes according to comparative advantage (which means allocating mobile, benefit, and performance taxes, and user fees, to the Scottish budget; but coordination and framework measures to the central government). Supporting measures to extend risk sharing, monitoring and fiscal oversight (using debt targets in particular) are then needed to bring greater credibility and stability to the system.

a) General approach:

We emphasise that what we propose is a fiscal devolution mechanism broadly similar to what had once been agreed by the UK Parliament for Scotland, but never implemented, in the Scottish Home Rule Bill of 1913; and which falls short of the full fiscal autonomy scheme adopted by the UK Parliament for Ireland in the Irish Home Rule Bills of 1912-13. It is also consistent with the recommendations of the Steel Commission (2006, chapter 9), in that it adopts a similar position on devolution but supplies the operating detail with respect to institutions, tax allocations, tax codes, direction of financial flows etc. So there is nothing unusual in what we propose. Indeed the UK, as a union, has been there more than once before. The innovation here is to provide a blueprint of how it might work in practice, comparisons to show how comparable schemes in certain other countries actually do work, and some institutional structure to support the changes.

We make only one change to the way in which public funding works in the rest of the UK. The remainder of the change proposed are intended for Scotland alone; although, by freeing up resources by abandoning the greater part of the old block grant system and creating a more lively Scottish economy, they are likely to have significant positive spillover effects for the rest of the UK. Some small adjustments will be needed to the existing UK institutions (see below), but again the main changes come with new institutional arrangements within Scotland (or, in one or two cases, abroad). So the philosophy here is to contain the changes within Scotland, and leave other things for others to change if they wish. But the gains would be shared with the UK.

The one change to UK public funding is to take pensions out of the social security system. That requires social security contributions to be made into a separate tax – as happens in nearly every country in Europe, and as is already the case in Northern Ireland – instead of the current system which is to fund social security via a opaque mix of general taxation and national

insurance contributions. This separation is needed in order to define the rents to UK government and the contributions to the central grants commission we propose for our vertical distribution element below. But pensions will continue to be paid out of a common national insurance fund, as now.¹³

In what follows, we propose a fiscal regime that contains a mix of elements from the Canadian and Australian provincial/state funding systems (more from Canada than Australia), with some components from Spain's asymmetric federalism and a few ideas from the Swiss confederation.

b) Design strategy:

We suggest a financing regime that is fundamentally based on fiscal autonomy in Scotland but which has a small, but essential, element of vertical transfer. The vertical re-distribution of funds between central government and Scotland would be used to address a small but crucial imbalance – in principle of either sign, but in all likelihood with more flowing to the centre than flows back. This mechanism will provide the UK government with the funds to provide shared services, to control its framework policies and the levers necessary to provide the coordination and redistribution spending it deems necessary to preserve the political (and social) union.¹⁴

We then introduce a strong horizontal component which gives the Scottish government the policy levers that will allow them to control the day to day management of the Scottish economy, realise the efficiency gains discussed in chapter 5, and give Scottish business the incentives to develop their markets and create jobs, growth, and investment and thereby better public services. This set-up will keep the economic policy ball, in the conventional sense, firmly in Scotland's court – using the budget and associated policies within a framework of general rules set by the UK collectively. The central payments are remitted to London, and not vice versa, in order to preserve the effectiveness of the policy instruments in Scotland. This framework also allows the Scottish government to maximise accountability, therefore efficiency gains and economic performance, in the ways we outline in chapter 5.

c) A UK Central Grants Commission:

To implement such a scheme in practice we have to change the institutional framework to match. We propose creating a *Central Grants Commission*. This is a device to reassure the UK government and other unionist parties that Scotland is operating in a consistent macroeconomic framework which reflects responsible decision making, and which prevents Scotland doing anything that might distort or destabilize the balance of UK macroeconomic policies or damage other regional economies. The Central Grants Commission would perform three core functions.

¹³ Pension payments are, in principle, funded by UK Government from individual contributions that already have been paid during an individual's working life. We see no economic reason to alter the current arrangements. We leave this function with UK Government as part of our mechanism for maintaining the UK social union.

¹⁴ The distinction between redistribution vs. regional stabilization is taken from Bayoumi and Masson (1995).

First, *partnership and coordination*: to ensure the UK continues to operate as a social, economic and knowledge union; and that the underlying regional/national policies are consistent and mutually supportive. Second, *economic and political*: that there is a mechanism that defines effective roles for the Scottish and UK governments; that there is an explicit redistribution mechanism between regions if needed, and also a central budget to provide automatic short term risk sharing transfers (but no central government interventions, and reversible). Third, *a UK monetary fund* handling any payments/loans/grants to or from the centre as described in the debt management sections below. In this role, the grants commission would act a little like a combined IMF and World Bank. Specific tasks to be assigned to this Commission include:

- a) Determine the size and distribution of financial support to regions and, if appropriate, between regions;
- b) Determine the rents/solidarity contributions to be paid to the centre¹⁵;
- c) Provide the means to design and undertake any needs assessment exercise, or oversee any jointly run regional development programmes (especially infrastructure projects).

Further, the Grants Commission would contain an ***Economic Policy Forum*** to reach agreed decisions on matters of joint interest or resolve any conflicts in the overall macroeconomic framework. The Forum will replace the existing, but currently under-utilised, Joint Ministerial Committee (JMC) for economic policy. Initially the Forum will comprise representatives from the UK and the devolved administrations, although any substantive shift towards devolution to England's regions would require this construction to be re-visited. Scotland's representative should probably best come from Scotland's Fiscal Policy Commission (proposed below). However the overriding priority when selecting the Forum's membership is to preserve the independence of the Central Grants Commission from Government, as it is for the Monetary Policy Committee at the Bank of England. The Forum would have the authority to *recommend* changes to the economic policies of any of the constituent "regions", although any such recommendations would require unanimity. Such recommendations would be advisory and non-binding on any government, and would include discussion of potential retaliatory reactions in cases of severe disagreement (see Chapter 5 below, section e), for specific example of this role of the Forum). The Central Grants Commission itself, and its Economic Policy Forum, would have the right to call on officials from the UK Treasury, Bank of England or Scottish government to give evidence and supply evaluations on specific issues that cannot be resolved by the Commissions' own staff. Those officials would have no permanent membership or voting rights in the Commission or Policy Forum. This is a partnership exercise constructed on the Australian or Canadian models.

¹⁵ It would be for the Scottish Government to hold detailed discussions with UK Government regarding any specific public policy function that should remain with the UK government for reasons of economies of scale or of scope, or for reasons of protecting the UK social or knowledge union. However once agreed it would fall to the Central Grants Commission to determine the appropriate level and direction of the accompanying financial flows.

d) The allocation of fiscal responsibilities:

Given that vertical and horizontal transfer mechanisms have been set-up, we need to decide which items and how much should be allocated to the Central Grants Commission Fund: the vertical re-distributive element. According to the arguments set out in chapter 5, these contributions need to be kept reasonably small. We have the example of the Basque lands and Navarre which operate very successfully in Spain and who pay the Spanish central government about 9% of their revenues as “rent” for common services such as defence, security, foreign and diplomatic service, central administration, a contribution to Spain’s EU dues, a top-up to social support if needed and so on. On 2007-08 numbers, that would mean a Scottish contribution of £4.7bn to the UK government (in the form of the grants commission).¹⁶ To this we can add another 1% in solidarity funds to allow the UK government to make its own redistribution and stabilisation payments, to make a total of £5.3bn.¹⁷ These solidarity funds mirror the UK’s own payments to the EU budget for solidarity purposes. So they should be of roughly the right size.¹⁸

This £5.3bn contribution would be paid for out of the devolved VAT receipts as explained next. That is 66% of the VAT receipts collected in Scotland in 2007-08, if we assume a 17.5% VAT rate will continue after the 2010 election. Notice that we are using the UK’s payments to the EU as a model for calculating the level of these contributions [under EU rules, Scotland cannot have a VAT rate different from the rest of the UK]. At present the UK pays 1% point of her VAT tax rate to Brussels for services rendered. We are proposing that Scotland should pay 11.5% points of her 17.5% VAT rate to London for an expanded set of services, and keep the rest (6% points) for herself.¹⁹ The provision of retirement pensions in Scotland remains the responsibility of the UK Government. Therefore contributions to pensions currently paid for by those living in Scotland – which we estimate to be £4.9bn annually – will continue to be paid by individuals directly to UK Government albeit under new the institutional arrangement we discussed earlier. This would not, of course, be a charge on the Scottish budget.²⁰

¹⁶ Figures calculated using current revenues and a geographical share of North Sea oil revenues. All the numbers in this section are calibrated to the Spanish example to give an idea of orders of magnitude. In fact those figures fall a little short of what is needed for the shared services we envisage. A full recalibrated sample budget for 2007/08, showing the financial flows to the UK government and the budget balances for Scotland, is set out in chapter 7.

¹⁷ Alternatively, payments into the solidarity fund could be graduated according to relative economic performance up to a maximum payment of 1% GDP.

¹⁸ In addition, there is Scotland’s population share of UK current debt service payments (£2.6bn in 2007/8). This is a transition issue. Once it is paid off or refinanced, that liability will vanish from the Scottish budget. But until then, Scottish remittances will rise to £7.9bn or 12.3% points of the 20% VAT rate. However, after that phase, remittances to London will revert to £5.3bn, or 8.3% points of the 20% VAT in today’s money. The text reflects this latter case.

¹⁹ In principle Scotland’s remittance to UK Government could be charged to general tax revenue. The reason for charging this against VAT revenues is that it mirrors the arrangements by which the UK Government remits funds to the EU. It can therefore be readily administered.

²⁰ Of course the UK Government might argue that current pensions are not wholly funded from past contributions, and that Scotland has to take a share of any revenue shortfall. That is a matter for inter-governmental negotiation, and would not, in any event, be a recurrent item on a Scottish budget as opposed to the UK budget.

The remaining taxes and expenditures would then be allocated to the Scottish government and be used to control the Scottish budget in the normal way. These include:

Income taxes; VAT and other sales taxes; corporation/profits taxes; property taxes; inheritance taxes; natural resource taxes; fuel taxes (to favour renewables); social security and payroll taxes, and other nonwage costs (to give Scotland the means to influence competitiveness, as in the rest of Europe); participation in “cap and trade” environmental taxes; financial market levies; other business taxes; council tax; user fees; tax concessions for knowledge workers (as used in the Netherlands); operating surpluses of statutory bodies; and the smaller taxes that already exist like stamp duty, alcohol and tobacco duties, passenger duties etc. New taxes might include landing fees for natural resources and energy; green taxes and carbon content fees.

This proposal also includes the idea to “Calmanise” (i.e. split) VAT between the UK and Scottish governments, as outlined above, on an assigned taxes basis so as not to contravene EU rules, but to repatriate to Scotland whatever is not required to fulfil the agreement to pay UK Government for shared services.

Finally we stress the important feature of fiscal autonomy is that it transfers to the Scottish government the means to exploit their control of the tax base and exemptions in this tax regime, just as much as tax rates and tax bands, as a way to expand the revenues and scope of the devolved taxes without having to raise tax rates.

The horizontal component therefore represents the principle of maximising the degree of fiscal devolution in order to increase the degree of accountability and resulting gains in economic efficiency as outlined in chapter 5 below; but supported in this case by some automatic federalist transfers (that is, additional risk sharing elements) to stabilise the economy since there will still be a small central budget and a larger Scottish budget.

e) Borrowing: deficits and debt management

Fiscal autonomy necessarily introduces the question of how to finance budget deficits in the event of tax revenues falling short of the Government’s spending obligations. In our model, as is the practice in most federal countries, any Scottish budget deficit would be financed by borrowing by the Scottish Government on the basis of new Scottish debt instruments to be sold in global financial markets.

However it is clear both from the public finance literature and from real world events that rigorous and enforceable protocols have to be developed that prevent an issuer of public debt instruments within a larger monetary union, such as a fiscally autonomous Scottish government within the UK, exceeding what is regarded as a financially prudent level of indebtedness.²¹ In

²¹ One approach would be to permit the market to decide what it considers to be prudent. However the difficulty, as we have seen in the case of Greece within the euro-zone, is that markets may continue to buy debt instruments

chapter 5 we engage in this discussion in some detail, especially on how to design and enforce an appropriate “excessive debt” protocol, and how we define “excessive”.

As noted above, in the short term it would fall to the Scottish Government to service its share of the outstanding stock of UK debt. However this item of public spending would decrease over time as Scotland issued its own debt instruments and took ownership of its own debt burden. This poses a particular problem at this juncture as the UK Government has incurred an unusually high level of national debt. However it is a transitional issue. The UK Government has at the same time acquired an unusual share of the UK’s financial institutions – a shareholding which it ultimately hopes to return to private ownership and recoup its initial outlay. Accordingly, any move to fiscal autonomy should make specific provision to tackle Scotland’s share of the UK’s debt burden in the transition. But Scotland should also receive an equivalent share of the equity position that the Government has taken in these financial institutions.

With respect to managing the debt once created, this could be done through the UK Debt Management Office (DMO) or via a Scottish Treasury. The loans would be self-regulating and be subject to the existing local authorities’ prudential code under which the borrowers determine what they can afford in terms of future revenues and debt sustainability. There are no formal borrowing limits. In that way, the Scottish government is free to borrow as much as it needs either at the prices it can obtain from the DMO or from the capital markets directly – whichever is cheaper. The latter course might involve a premium on the borrowing rate; but the government may still prefer to go to the markets to get a loan tailored to its specific needs and requirements.

f) The advantages of this scheme for the UK government:

This scheme is predicated on the value, to UK Government, of creating a Central Grants Commission, of saving money by abandoning Barnett, of savings achieved by reallocating spending decisions as shown in the sample budget of chapter 7, of creating a better economic performance, and of significantly increasing the degree of financial accountability of the Scottish Parliament. These are all ideas to which everyone, including the UK government and the wider UK electorate, should and presumably would subscribe. This is a constitutional arrangement with gains for both sides; not a challenge in which everyone tries to salvage what they can.

g) Institutional changes:

The proposals that we have detailed in this chapter have consequences for the institutional arrangements that govern economic policy management in the UK. We have stressed throughout that a shift to fiscal autonomy has to be accompanied with the creation of new administrative and coordination capacities that are consistent both with general economic stability for the UK as a whole, and the continuation of the UK political and social union. At the same time, fiscal

beyond the point where it is prudent to do so, gambling on other members opting to bail-out the debtor country in preference to permitting it damage or leave the union. A more prudent policy is to design monitoring and enforcement protocols that ensure this problem does not arise. This is done in chapter 5 below.

autonomy has to provide Scotland's Government and Parliament with the economic policy levers and institutional capacity that it needs. In this section we outline what we regard as the necessary institutional adaptations and innovations that will be required to meet these various objectives.

- (i) *A Scottish Exchequer*: this would provide the normal exchequer and public finance management along with the routine economic policy functions associated with any government Treasury. Many of these functions are already provided by the current Scottish Government economics departments. Inevitably some part of the work of a Scottish Exchequer would also involve coordination with UK Treasury, especially in relation to periodic public spending reviews. We further suggest designing the tax service along Norwegian or Finnish lines. Figures from the OECD show that the Finnish tax service operates at 30% fewer personnel (in proportion to the population) than the UK service, and at 60% of the cost (as a proportion of GDP per head).²²
- (ii) *A Tax Collection Service*. Fiscal autonomy requires that Scotland be responsible for collecting her own taxes, and administering her own tax system. This might be done as through a specialised unit in the Scottish Exchequer. A separate tax service would be required anyway under the Calman model of tax devolution.
- (iii) *A Scottish Fiscal Policy Commission*. As explained above, we are proposing to establish a Fiscal Policy Commission to monitor and advise the Scottish Government and Parliament on Scotland's evolving fiscal policy position over the short, medium and long term. The Commission would also review the consistency between the tax and benefit systems, and if need be propose ways to bring them into line. We propose regular consultations between the Commission and the Scottish government, with the Commission normally providing three reports a year to cover (a) aims and guidance of fiscal policy after consultation with the government; (b) a commentary and evaluation of the prospects for the economy and its public finances following the budget; (c) a mid-year assessment of fiscal health, outlook, debt, plus forecasts of the likely future fiscal position. A more detailed specification is given in Annex E.
- (iv) *Changes at the Bank of England*. Both the Bundesbank and the ECB have regional representatives on their executive and policymaking boards without regard to size, and both maintain representative offices in their constituent regions.
- (v) Formal representation at the *European Commission* would be required since the Scottish Government will need to liaise over her fiscal medium term objectives and national stability programmes
- (vi) Equivalent representation on UK bodies for trade, financial regulation, and the IMF.
- (vii) Debt management techniques: subcontract to the Debt Management Office in London, but take advice from the debt management group at the IMF before doing so.

²² Figures from "Tax administration in OECD countries and selected non-OECD countries" OECD, Paris, 2008.

Summary

- Fiscal autonomy involves a transfer of comprehensive responsibility for all taxes levied in Scotland to the Government and Parliament of Scotland. It replaces entirely the current block grant regime. Under fiscal autonomy the public spending undertaken by Scotland's government will be financed by taxes raised by that government;
- Scotland's devolved government will be responsible for all elements of the tax regime in Scotland (with the exception of VAT which will remain the competence of UK Government) and will deliver virtually all public services that are currently reserved, including social security but excepting retirement pensions which will remain under the control of UK Government;
- Scotland will remit to UK Government those funds required to pay for services provided by UK Government to the people of Scotland – e.g. defence, foreign policy, central administration, etc.;
- We need to create a UK Central Grants Commission to determine the direction and magnitude of all financial transfers between the Scottish and UK Governments, including those associated with the operation of the solidarity fund;
- An independent Economic Policy Forum should be established within the Central Grants Commission that will ensure coherence between the economic policy of the devolved administration and the UK's overall macroeconomic framework.
- It remains to specify exactly how the underlying law could best be devolved, and what information, administrative and computer system changes need to be made in order to support the new fiscal arrangements. That is a subject for a later and more detailed paper. Our concern here is with the overall framework.

Chapter 5: Formulating the Alternatives, the Economic Case for Fiscal Devolution

The economics profession has always looked at devolution (or fiscal federalism) as being a way of resolving the problems that arise in the provision of public goods; of delineating the roles of the private and public sectors; and providing an efficient way to correct various forms of market failure, ensure an equitable distribution of resources, or stabilise regional economies and employment. The proposition being that where these properties fail, governments could (and presumably should) intervene to correct the failures. The question is whether a single, centralised, monolithic government could or ever would succeed in maximising social welfare across all regions out of a sense of benevolence, given the electoral pressures and special interests that inevitably arise in a heterogeneous multi-party, multi-region democracy.

The answer is surely no. Where there are differences in structure, endowments or resources, or in the way economies respond to changes, or in shocks or an economy's position on its cycle, or in preferences and needs, it would be very hard – if not impossible – for any one government to come up with one common solution (set of policies) that satisfied everyone in the sense of maximising social welfare because different regions would require different solutions for their circumstances²³. And it would be doubly difficult if the central government has less precise information on local needs/conditions²⁴; or if the policies it enacts are helpful in one place but have adverse spillovers in another (e.g. costs to be offset; benefits from free riding); or where the central government is less accountable because of political distance from the regions; or is subject to special interest groups because of the electoral calculus of majority rule. As a result the provision of public goods, and stabilisation or employment would be inefficient, and the performance of regional and aggregate economies below that which could have been achieved. One might suppose the damage done would be less if everyone and every region were identical. But that is not the real world; and even then the outcomes would still be less efficient and below potential for each region. And, depending on the distribution effects of the new policies, some regions may be made worse off than they were before.

a) Fiscal devolution: decentralisation vs. autonomy

This argument is sufficient to demonstrate the classic “decentralisation theorem” [Oates (1972)]: that, in a multilevel government, each level of government (including central government) will maximise social and economic welfare within its own jurisdiction. That will necessarily provide a higher level of economic and social welfare overall than can be gained in a regime in which the central government provides a single, uniform set of policies and public goods for all jurisdictions – since the regional policymakers could simply have replicated the central government's common policies if they had wished to do so. That is the case for devolved

²³ For example, the ability to choose a different mix of tax increases and spending cuts to reduce a deficit after a recession, or to pick the timing to do so, or to design a tax system with maximum effect on performance but minimum distortions (Annex C).

²⁴ Since there is no reason why the centre could not hold the same information, this implies that information must be of less value to them – with predictable effects on the effectiveness of their policy decisions for the regions.

fiscal policies: decentralisation will always produce better outcomes for all (including for the centre)²⁵.

A standard response has been to say that the same result can be achieved by a common set of policies plus a set of suitably calculated lump sum transfers (subsidies, grants, side payments) to each region, chosen to allow the same local outcomes to the point where marginal benefits equal marginal costs. That, of course, is the underlying justification for the block grant system that we have used up until now. But it also means that grants may have to be more generous in some regions than others; and implies no accountability is imposed on those who raise the grants, *or* on those who spend them. Those who spend the money do not have to raise it, and vice versa. Moreover if the grants are to respond to local conditions, and if there are structural or cyclical differences, or more accurate information at the local level, or if the central government finds itself constrained by electoral calculus, then we will have to ask regional governments to decide on those grants for themselves – giving rise to even less accountability and even more perverse incentives. So this approach is not going to work well in practice, as we have now discovered. Far better to make the regional governments raise and spend their own revenues directly, rather than ask for a grant. They are then made accountable to their own electorate and must bear the pain of their spending decisions; but can still profit from more precise information on local conditions, differences and preferences, and with some protection from electoral coalitions elsewhere. The result will be more efficient policies, leading to higher growth and higher employment than is possible under a grant or assigned taxes regime.

This, essentially, is the case for fiscal autonomy (over and above other financing arrangements). The remaining question is to decide how far the autonomy should go. Regional governments will recognise that they have only a limited capacity to influence local employment or prices, or to play an active stabilisation role or borrow for a passive stabilisation strategy. The central government must therefore retain an important role in coordination, monetary stability, stabilising the macro-economy in the international arena; also in competition policy and financial regulation.

b) Allocating instruments and responsibilities

This argument suggests there is a natural hierarchy in how policy instruments should be allocated between central and regional governments. Taxes on immobile factors, property, resources; user fees; benefit taxes and spending to manage “Tiebout sorting”; also income, sales, corporate and business taxes, and social security taxes that affect mobile factors and competitiveness, should be allocated to regional governments; also spending on health, education, security, infrastructure, R&D and innovation, and development. These are all instruments that affect productivity, growth, jobs and the ease of doing business; and, contrary to conventional wisdom, include taxes on mobile factors precisely because the ability to set taxes equal to the marginal cost of providing services and spending at the regional level is necessary if both households and

²⁵ Subject to not devolving so far as to create serious diseconomies of scale in the delivery of government services.

firms are to choose locations that provide the most efficient level of services – and to give governments a direct incentive to supply those services efficiently, encourage competitiveness and improve their economies.²⁶

By contrast, framework policies to affect monetary conditions, price stability, financial stability, taxes/spending for income or resource distribution, competition and regulation, mechanisms for internal/external coordination, and commercial policy are better left with the central government.

This type of allocation also reflects the key importance of creating a region's "own sources" of finance in a devolved system. A regime that relies on grants or tax allocations provides a fatal incentive to expand and extend their public programmes beyond efficient levels by pressurising the centre to shift more from the centre or other regions in their direction, or to expand the common debt issue to allow that to happen.²⁷ Offering the prospect of an easy bail-out, or guarantees for local debt issues would have the same effect. Creating own sources, with properly priced guarantees (if any at all), largely obviates that problem as it passes the responsibility and accountability on to the regional government: a second advantage of fiscal autonomy. However autonomy brings related incentives to export taxes or use tax competition: a tourist tax, hotel tax, tax on exports or natural resources etc that shifts the burden of taxation onto those in another jurisdiction (tax-exporting), or cut taxes and labour costs to induce relocation (tax competition). For that reason, commercial, anti-trust and regulatory policies form a natural province for central government. In fact ensuring coordination and financial discipline may be a large part of their job, two functions that actually begin to merge under fiscal autonomy. It would therefore be as well to combine them into one agency, and provide equal access for both regional and central governments.

At this stage there will be a natural concern that these arrangements could lead to an expansion of government, with overlapping and conflicting functions at different levels. But this will be minimised if instruments and responsibilities are chosen according to comparative advantage as here. That way the economic distortions and inefficiencies that might otherwise arise²⁸ from excess fiscal competition will be kept below the inefficiencies that appear in other regimes. In practice, it appears that this tendency to larger government is weak (Oates 1985, 1989) and mostly depends on the form that devolution takes, not its existence (Rodden 2003). Where decentralisation is built around raising taxes (as in our case), it is associated with smaller government. But where it is financed by transfers or grants from elsewhere we find a tendency to larger or less efficient government – another point favouring fiscal autonomy over other regimes.

²⁶ Demonstrated in Oates and Schwab 1988; and Oates 1996. Tiebout sorting is the proposition that people/firms will move to the location that provides the level of taxes or spending that suits their purposes/preferences best.

²⁷ Argentina's financial collapse in 2001 is perhaps the best (and most egregious) example of this phenomenon.

²⁸ See Sinn (1994), Wilson (1999), Wellisch (2000) for demonstrations of how such distortions can arise.

c) Institutions, trade-offs and operating constraints

Good institutions are important if we are to realise the potential gains here. More recent studies of fiscal devolution have focused on the political institutions, decision making framework and operating constraints that shape the policies that emerge; with an explicit focus on the incentives which these factors create, and the information asymmetries which determine how participants at different levels of government interact and guide the outcomes. Until now the trade-offs have been straightforward. Devolution reduces the inefficiencies that stem from a centralised one-size-fits-all set of policies or public goods and so improves overall economic performance, but may create conflicts or inefficiencies in the form of adverse spillovers that damage performance if not recognised by regional governments – or if the central government is not playing its coordinating role.²⁹ Consequently, devolution is at its most effective and the gains from autonomy largest when there is diversity (of structure, circumstances, preferences) and when the spillover effects of local action are small or easily resolved.

Many have therefore seen the inter-government division of fiscal responsibility as a principal-agent problem in which the centre is principal, and the regional government as an agent with better control and more detailed knowledge acting on the central government's behalf. Whereas this may seem natural when the controlling instrument is a block grant or assigned taxes chosen by the centre, it cannot be correct when there are differences in preferences and structure at the regional level – because, even under uniform preferences and market responses, decentralised decision making would produce better outcomes and because grants make regional governments accountable to central government, instead of to their own constituency, as we see in the new UK government proposals for Scotland. This would create what Inman (2003) calls administrative federalism rather than substantive decentralisation. In reality, it is not clear who is principal and who is agent here because the parties face different electorates, different responses and different circumstances. So the trade-off is that central control can produce tighter coordination. But if we want to increase accountability, and achieve greater efficiency and better outcomes at the same time, we need to reverse the principal-agent roles – at least as far as the comparative advantages in what each player can deliver best. Since central government has a comparative advantage in creating cooperation, imposing discipline, and setting the general policy framework, the best way to do that is to go to a decentralised scheme with small grants (to the regions) and rents (from the regions) to realise both the gains of coordination and the gains of greater accountability and greater efficiency.

d) Soft budget constraints, bailouts and discipline

Decentralising fiscal policy may lead to fears of weaker budgetary control. Although there is no reason why regional governments should be worse in this regard than the central government or large corporations, we have already seen the temptation governments face to export their tax

²⁹ Favourable spillovers likewise because they encourage free-riding and hence inadequate policy effort.

raising problems to another jurisdiction. That means there is an equal temptation to over-expand and export the burden of financing, or paying off debt, to other members of the union; interest rates rise for all if one region borrows, but not by as much as they would if all were to borrow. Similarly the borrowers may calculate (probably correctly) that the central authorities would prefer to bail them out rather than risk the financial disruption if they should default. Greece's recent debt problem is a beautiful illustration of both points. Thus a real or perceived guarantee of a bail out creates moral hazard among both borrowers and lenders, increasing the risk of default.

There may be political and economic motives behind the desire to expand in the first place, but what can be done to contain the danger of *overexpansion*? Or of not rebalancing the budget in good times, so as to be able to weather a negative shock later? All governments will of course promise that there is no such danger in their case, but the issue is the credibility of such claims. After all, an incentive to over-expand is built into the system. But there are four mechanisms that can help contain such behaviour: **a)** increasing the accountability of the regional governments, **b)** the risk sharing automatic transfers found in fiscal autonomy, **c)** enforceable deficit or debt rules such as in Europe's Stability and Growth Pact, and **d)** a fiscal policy council charged with oversight and monitoring the government's fiscal plans and fiscal performance. The first two are part of the choice of a fiscal regime; the second two, institutions within which those regimes have to work.

The first of these possibilities, increased accountability, points again to fiscal autonomy as a most appropriate regime. It depends of course on the policymakers' concern for "reputation" and sense of responsibility. So the amount of discipline it can impart to controlling the budget, in the absence of some external support, will be uneven across different political administrations and over the electoral calendar. On the other hand, a funding collapse would suggest that the regional government had failed and leave them accountable to the censure of the voting public – the more so the more autonomy has been granted. Discipline therefore calls for more autonomy rather than less, backed perhaps by some external restraint mechanism.

The second possibility, risk sharing transfers, is also a feature of fiscal autonomy but depends on the existence of a central budget and transfers to/from that budget as well. How this works in practice is described in more detail in Annex A. The key point here is that these countercyclical or stabilising transfers are automatic, reversible, instantaneous, and not subject to the recognition or implementation delays of a block grant or assigned taxes regime. Risk sharing more generally depends on cross-border ownership of stocks, bonds or other forms of income; on cross-border lending or credit; and on cross-border fiscal transfers³⁰. So there would be risk sharing via integrated capital or financial markets, and via the loans/credit channel even in the other funding regimes. But empirical studies have shown that, whereas these channels supply the larger part of risk sharing within some currency unions (80% in the US or Canada), they supply only half that

³⁰ Asdrubaldi et al, 1996, Kalemli et al 2003, Melitz 2004

in the UK and even less elsewhere.³¹ It would therefore be wise to go for a more extensively devolved system to get the extra risk sharing and stabilizing power. More risk sharing means less need or scope for discretionary fiscal policies and therefore less danger from indiscipline. But to make this work, we need to retain a central budget of some kind. That raises a second problem: moral hazard, the perception that excessive deficits will be bailed out or otherwise “insured” by loans from the central budget. Moral hazard blunts the incentive to maintain fiscal discipline, in particular to shrink deficits in good times to prepare for possible bad times (all the more if others are not doing so either). Once again, it is better to have more regional stabilisation than central insurance and soft budget constraints; that is, it is better to have more extensive devolution, with fiscal autonomy linked to a central budget, rather than a centrally determined system.

The third possibility is to place enforceable limits on the size of fiscal deficits and debt, and hence on the use of fiscal policy itself. The best known examples of such fiscal rules are the EU limits on public sector deficits and debt: no euro-zone country is allowed, on penalty of fines, to run a deficit greater than 3% of its GDP or public debt greater than 60% of GDP; and the deficit is further required to be balanced or in surplus on average over the cycle. The problem with these rules has been two-fold. First they have proved very difficult to enforce in practice, as the Greek debt problem, and earlier difficulties with deficits in France, Germany and Portugal show. The problem reflects the lack of political will to extract fines from the sinners. Second, the ability to monitor deficits with real-time data, or to detect significant improvements in those deficits, is virtually nil. Early releases of deficit figures, and the data necessary to strip them of their cyclical components, are so imprecise that the ability to detect transgressions reliably is only achieved after about four years³²; far too late to take any corrective action, or induce such actions through the threat of fines. Estimates of the cyclically adjusted structural balance are likewise next to useless in real-time. As a result, it is probably better to focus on the idea of a **debt limit** instead.

A debt target would also be preferable for a number of other reasons. First debt is what has to be financed and what may cause default risk, not deficits per se, as the Greek experience shows. Second, the debt burden is better defined: what has and needs to be borrowed is known to the markets since they hold the paper. Accounting tricks and off-balance sheet items are of no help here. Third, debt is a moving average total of past deficits and therefore roughly represents the structural or cyclically adjusted fiscal position we need to monitor. Fourth, and most important, debt is a stock and not a flow. That means it is persistent, which will make policymakers more forward looking in their plans and, by extension, make their plans more credible – or at least more easily tested for credibility. That in itself should cause the policymakers to choose more reasonable plans. In particular, persistence gives them the incentive to limit debt in order to preserve their freedom from financing difficulties in the future.

³¹ See Asdrubaldi et al, 1996, Kalemli et al 2003, and Melitz 2004 again.

³² See Hughes Hallett, Kattai and Lewis (2009).

The fourth option, to establish an effective fiscal policy monitoring process, would correct two defects in the three earlier options; first that they are automatic and partial (and therefore in need of monitoring), and second they are purely backward looking. They do not imply any pressure to modify fiscal plans in the light of future problems. To get round that, we need to establish a Fiscal Policy Commission (in addition to the other measures noted above). This Commission³³ would have the responsibility to review the fiscal outlook for Scotland, examining the revenues likely to be available from the Scottish economy, from the UK and other sources, and the future expenditure implications of current policies, including PFI commitments, changing demography, and pension costs. It is important that such a body should be seen as objective and non-political, and should bring the openness and transparency to the government's position that is missing in current UK practice. Such a body would have an important role in advising the government on implications of its fiscal policies; and, more important, in making the case for borrowing more credible with the public and in the markets. This is hardly an unusual idea. To prevent any suggestion that the central government would guarantee the deficits of their regional governments, and thereby give the latter an incentive to relax on discipline, several countries (Canada, Chile, Sweden, Belgium, Germany, Hungary) have found it helpful to set up an independent debt management authority to oversee, regulate and possibly enforce the prudential issue of debt in their economies.

e) A specific debt targeting mechanism: the Excessive Debt Protocol

There remains the question of how to set a specific debt target. This could be done using the empirical work of Reinhart and Rogoff (2009) on the links between debt and growth rates. However, that kind of analysis is pretty crude as a means of estimating the level of debt that can safely maximise growth rates. A more sophisticated approach is given by Aschauer (2000) where the optimal level of public debt is expressed in terms of the public to private capital ratio. This would allow us to determine and calculate the best level for public debt for any specific economy or sample period. Such a rule of course implies some kind of golden rule in the long run (i.e. across the cycle, current government spending should be financed from current revenues rather than borrowing) and that the target debt to GDP ratio should be constant – results later confirmed in the paper by Aizenman et al (2007).³⁴ If maintained, such a rule would imply sufficient capital cover in the economy as a whole for public borrowing: good banking practice.

The problem with any fiscal control rule of this type is always enforcement, as the experience of the EU's stability pact shows. We therefore propose the following enforcement mechanism:

- a) The UK and Scottish governments jointly operate a UK monetary fund (a mini-IMF) as part of the responsibilities of the grants commission discussed above;

³³ The general principles behind the idea of a fiscal policy council are set out in Annex E below.

³⁴ By contrast, Kisanova et al (2006) argue that the optimal debt rule is a random walk; i.e. each period you aim to keep the debt ratio where it currently is, rather than return it to some fixed level. However a random walk implies an infinite variance, which means a country operating such a rule would become insolvent at some point with probability one. It is hard to know what is optimal about going bankrupt with certainty. The source of this difference lies in the myopic optimisation techniques used.

- b) The debt targeting system should be set up as a debt target value and an upper boundary or ceiling;
- c) The space between the target and upper boundary should be divided into three equal ranges.

For example, if the debt target was set at 45% of GDP (debt-to-GDP ratio), and the ceiling at 60% in normal times, the excessive debt protocol ranges would be from 45% to 50%; from 50% to 55%; and from 55% to 60%. The first range would be the range of normal fluctuation and would require no immediate action or comment (bear in mind that the debt ratio, being a structural indicator, is less volatile and slower moving than a deficit). But if the level of debt entered the second range, Scottish fiscal authorities would be placed on the watch list and subject to comment/advice from the Fiscal Policy Commission. Any financial assistance from the Grants Commission, or indeed comfort statements from the Fiscal Policy Commission to reassure the financial markets, would automatically become conditional on policy improvements being made and subject to joint oversight (chapter 4) to avoid it being diverted. If Scotland's level of debt entered the third excessive debt range nonetheless, this would trigger public warnings and specific policy recommendations, delivered through the Fiscal Policy Commission and to remain in place for two years. At this point, any assistance, loans, or bail-out guarantees would become strictly conditional on those recommendations being implemented to the Scottish Fiscal Policy Commission's satisfaction. Finally, if Scotland's debt-to-GDP ratio rose above 60%, all bail-out guarantees would be lifted and any further debt issued would be priced according to market forces with an explicit no bail-out provision attached. Moreover any further UK support would only be offered if the Scottish government accepted the "assistance" of UK Treasury officials in running government spending and taxation until the 60% limit or better was regained.

Any loans or other assistance invoked under the excessive debt protocol would be channelled through the Capital Grants Commission. To pay for that, the Commission could use its own funds (contributed by the [regional and] devolved and UK governments) plus a levy imposed of 0.25% of GDP say for each percentage point that any deficit (symmetrically for any participant) had exceeded 3% in the period in which public debt was in one of the upper two excessive debt ranges. This levy would be lifted only in quarters in which growth was recorded as negative. These conditions would all be agreed and made public to all before the regime started, and the government's progress in relation to them would be discussed in public by the Fiscal Policy Commission.

Apart from a mild fiscal penalty designed to slow down the expansion of excessive deficits in the debt conditionality ranges, the real sanction here is that the possibility of any loan, bail-out or guarantee is strictly conditional and known to be so. Once debt goes beyond the 60% range, any assistance becomes unavailable or is withdrawn and the Scottish government is on its own in the markets. Since this fact will be known in advance and that any breaches will come with at least two years warning, it should act as a break on imprudent debt expansions (except in severe

recessions) and should guard against the dilemma of moral hazard. In fact, given the warnings and independent supervision, a government that nonetheless transgressed the 60% debt-to-GDP limit would be subject to a severe political backlash and likely to incur rapidly escalating borrowing costs. Note also that the penalties in this protocol are all designed to withhold what a government would like to have, not remove something which they already have.

Summary

- The economic case for devolving fiscal policy competence to sub-state administrations is well established in the literature and generally uncontested. The benefits accruing fall into two categories – first benefits associated with designing economic policy (tax and spend) instruments to meet the specific economic conditions of, and challenges confronting, the sub-state jurisdiction; second, benefits associated with maximising the efficiency of public spending by making the sub-state spending authority responsible for raising all monies that it spends and reaping the (tax) dividend of higher economic growth. Fiscal autonomy maximises both sets of benefits. A regime that relies on grants or tax allocations is inferior in both respects;
- Under fiscal autonomy, important framework policies are reserved to UK Government including monetary policy, competition policy, elements of market regulation (e.g. consumer protection, regulation of financial services, health and safety, etc.), macro-economic coordination and external trade policy;
- Decentralising fiscal policy carries the danger of weaker sub-state budgetary control and raises the potential spectre of imprudent sub-state spending policies being financed by excessive borrowing. We address this problem in two ways. First we propose introducing an **excessive debt protocol** which will impose on the sub-state government a limit to the total volume of debt it may raise, expressed as a percentage of GDP. We demonstrate why a debt target is more efficient from an economic perspective than is an annual deficit target. Second we propose creating an independent Fiscal Policy Commission responsible for making policy recommendations to the Scottish government should Scotland's debt level begin to rise towards the three thresholds defined by the excessive debt protocol. Any support necessary to sustain debts levels beyond the threshold will be strictly conditional on the recommendations of the Fiscal Policy Commission being implemented.

Chapter 6: How Significant are the Benefits of Fiscal Devolution in Numbers?

How large are these gains from fiscal devolution likely to be in practice? There has been concern that decentralising fiscal policies would have little effect on growth; and some have suggested it might even be negative because of unchecked spillovers (a lack of coordination), or excessive taxation at different levels of government, or inefficiencies caused by duplication.

What other studies have found:

The literature on this point is not extensive, but suggests that the effect on growth is likely to be positive rather than negative for two reasons. First autonomy allows decisions to be tailored closer to the needs of the economy; and allows more efficient investment decisions, including human capital. Second, because autonomy incentivises regional governments to seek growth to expand their tax base given that they now have jurisdiction over the revenues.

Nevertheless, a casual reading of the empirical evidence does suggest results that are rather mixed, if not controversial. There are a number of reasons for that, which imply that it is important to take a more nuanced view of the empirical evidence:

- a) It is particularly important, as we argue below, to make a clear distinction between the results for developing economies and those for high income countries. It appears that the impact of fiscal decentralisation on growth is often negative in the developing world, but is positive in higher income countries. There are several explanations for the difference: corruption in the developing economies, which in turn reduces growth, or a lack of coordination in the absence of strong institutions (especially if democratic traditions are not strong so that regional elites emerge with access to natural resources), or poor economic governance. But we are interested in the higher income countries case here.
- b) The type of decentralisation matters, more than the existence of decentralisation per se (which might not). We have seen that above in chapter 5. Depending on the form or design of devolution chosen, some countries may have seen little direct benefit. To get the gains, we need to be sure the devolution is market preserving and is consistent with inter-region competition, and allows the regions to be competitive with the centre (Qian and Weingast, 1997).
- c) The impact of decentralisation depends on good supporting institutions. There is no guarantee that all countries will have adopted suitable institutions. In particular, it is important that governments should put coordinating mechanisms in place to check the spillovers that might hold back growth. Similarly if there are overlapping tax jurisdictions then there is an incentive to over-tax. This is an additional argument for preferring full autonomy in order to eliminate that possibility.
- d) Aggregate studies merge the results for federal countries whose devolution arrangements may be very different, and therefore get less clear results. Specifically, if there is a case for asymmetric federalism, forcing a uniform federal structure on all players may be

counterproductive. Or, if the impacts of decentralisation vary by sector, then countries with different economic structures may show conflicting results.

e) There are econometric difficulties in these studies, and as a result the disagreements in the findings may be more a matter of how large the impacts are than of their sign.

f) One fact that all authors seem to agree on, is that it is very hard to agree on one index that measures the degree of devolution/decentralisation achieved. To capture different characteristics of fiscal devolution, for example the difference between administrative vs. effective (in the sense of separate decision making) decentralisation at the same time as the extent of decentralisation, will require two or more such indices. This has not always been done.

These observations are implicit in most of the points made in earlier sections. But they reinforce the idea that the type and design of devolution is more important than the fact of devolution, as is having an appropriate set of effective supporting institutions.

Potential impact on growth:

Empirical studies of the relationship between fiscal decentralisation and growth are not plentiful. A large part of the reason has to be the difficulty of resolving the controversy and debate over the appropriate definitions, measures and methodology to be used as we noted above; and not least the difficulty of controlling for administrative vs. substantive decentralisation, or the quality of the supporting institutions or coordination efforts within that data. Nonetheless there have been a series of studies which can be used to make rough estimates of the impact of an increase in fiscal devolution. A convenient summary of the results is given in Feld et al (2007). There are 6 cross-country panel data studies covering up to 91 countries with data covering 3 decades, followed by 9 single country studies with somewhat wider spans of data in this survey. The finding that really stands out here is the distinction between the results for developing countries and those for the high-to-middle income countries. The developing country results consistently show that increased fiscal decentralisation, as measured by the share of government spending by the regional authorities in total government spending in that region, has either an insignificant or a *negative* effect on economic growth. In contrast, increased devolution in the high-to-middle income, developed countries appears to lead to systematically *increased* growth rates³⁵.

This distinction is interesting because it explains a good part of why the empirical results on the impact of fiscal decentralisation on growth are sometimes thought to be mixed and inconclusive. If we stick with the high/middle income countries, the OECD countries with detailed results for the US, Germany and China for example, we find that a 1% point increase in fiscal devolution (share of local expenditures in total government spending for that region)

³⁵ Subsequent empirical studies have continued to reinforce this result, that devolution increases growth: Thiessen (2003), Thornton (2007), Imi (2005).

generates additions of between 0.16% and 0.32% to growth rates. Translating that to Scottish data for 2007-08, and taking a mid-point estimate of 0.25%, this means a 1% point increase in fiscal devolution might be expected raise GDP by 1.3% after five years above what would otherwise have been the case; that is, by £1.86bn, or £350 in income per head, or £690m more in government revenues and spending. These are small numbers, but then a 1% increase in the devolution index is a small change. If this relationship continued to hold for Scotland, then a 10% increase in the fiscal share would generate a 13% increase in GDP (£18.6bn, £3500 per person, £6.9bn more in government revenues) after 5 years.

There are two reasons to be cautious with these results. First, although they are quoted as leading to higher growth rates, growth models in economics usually show that the result of a one-off increase of some creating growth factor is an increase in the *level* of output, not a permanent increase in growth *rates*. For a permanent increase in the growth rate, continuing increases in that factor would be needed every year. But the degree of fiscal decentralisation cannot go on increasing without limit; and even if the consequences of an increase in devolution took some time to be realised, they would eventually come to an end. Hence, the figures in the previous paragraph are better seen as medium to long term gains.

Second it is likely that the effects of fiscal devolution are uneven, being larger in some sectors of the economy than in others. Investigating the effects of devolution using aggregate data is therefore likely to miss the impact of some of those effects. Brueckner (2006) and Cerniglia and Longaretti (2008) both single out education as the primary source of the gains from decentralisation, and to start looking in that sector would allow us to address the problem of the effect on growth rates since it takes us into the realm of endogenous growth models. Regressing the share of education spending in GDP on the same index of fiscal decentralisation (and other control variables) for a sample of middle income European countries for the past two decades reveals that a 1% (not percentage point) increase in decentralisation typically increases the share of education spending in GDP by about 0.8%.³⁶ Using estimates of how educating spending affects output levels in an endogenous growth model from Schneider (2005), we then find that 0.8% increase in education spending would generate an increase in income (output) per head of 0.6%. Consequently, an increase of 1% in fiscal devolution would produce a rise of 0.6% in incomes per head. Putting this together, an increase of £520m in revenues placed under the control of the Scottish government would eventually produce an extra £900m in GDP via the education route. These figures are of course in the best tradition of “back of the envelope” calculations, but they give us a fair idea of orders of magnitude involved.

Summary

- Fiscal autonomy will improve Scotland’s economic growth performance for two reasons. First fiscal autonomy allows decisions to be tailored closer to the needs of the economy

³⁶ R Shakirova (2009), “Public Education and Health Provision: How decentralisation affects the quality of public services”, PhD Thesis, George Mason University.

and encourages more efficient investment decisions to be made, including in relation to human capital. Second because fiscal autonomy creates an incentive for sub-state governments to maximise the rate of economic growth as this expands their tax base over which they have fiscal jurisdiction.

- Although the empirical literature has suggested an ambiguous relationship between fiscal decentralisation and improved economic growth, negative results seem to be associated particularly with developing countries. However there is strong evidence that the growth dividend from fiscal autonomy also depends significantly, quite possibly decisively so, on the specific type of decentralisation that is preferred, and on the institutional arrangements that underpin fiscal autonomy.
- The studies that we have reviewed are essentially comparative static and take little account of the dynamic (or cumulative) gains in economic growth which we suggest will accompany fiscal autonomy. For example fiscal autonomy permits a government to assign expenditure to policies that increase economic growth over the longer term (e.g. education) and to finance such increased investment spending, where required, by borrowing. Therefore although fiscal autonomy is likely in this case to lead to higher economic growth, because the line of causality is neither direct nor transparent it is difficult to capture econometrically. Nonetheless that causality does exist.

Chapter 7: Simulated budget balances for Scotland in 2007/08 using GERS data and the Raise and Remit scheme.

Summary position: Scotland should set all tax rates/bands (save VAT whose variance within a nation-state is forbidden by EU rules), collect all taxes raised in Scotland, and remit to the UK Treasury to cover shared services.

- Using 2007/08³⁷ as an example, total revenues raised in Scotland by both the Scottish and UK governments would be **£52.5bn** – all passing through a Scottish exchequer. From that, two types of payments are passed on to the UK Treasury: those for shared services (defence, international services, share of UK debt servicing); and those which reflect an existing contract between the UK government and Scottish citizens (pensions), for which the Scottish exchequer is acting as a collecting agency without creating any liabilities for the Scottish budget or Scottish spending.
- Total spending that year was **£52.3bn** (£48.1+£2.7current spending adjustment+£1.5capital consumption) using the UK own government's measure and the standard national accounting definition of the public spending-revenue balance. A **surplus** of £219m (compared to a **UK deficit** of 2.8% of GDP, or £39bn approx, for the same period).
- Total revenues were raised as follows:

revenue	Scotland's share (£bn)
income tax	11.2
VAT	8.0
national insurance	7.9
North Sea revenues	7.3
corporation tax (excl NS revs)	3.5
all other revenues (each<£3m)	14.6
total	52.5

Of these totals, UK Government Spending and Revenues in Scotland are:

- Payments to be made by Scotland would be a) for shared services, and b) transfers as agent to the UK Treasury (not from the Scottish government). A total of **£11.7bn**...

a) payments to Westminster	£bn
defence	2.8
international services	0.6
debt servicing	2.6
total to UK for shared services	6.0
b) payments to UK pension fund	£bn
state pension	5.0
pension credit	0.7

... leaving **£40.8bn** free for Scotland to spend as she wishes.

³⁷ These are the most recent GERS data available. All numbers here are from GERS, Scottish budget and DWP pension figures.

- Thus, total spending by the UK government in Scotland would be:

a) spending by Westminster in Scotland	£bn
defence (estimated)	2.0
international services	0.0
debt servicing	0.0
total spent in Scotland	2.0
b) spending by pension fund	£bn
state pension	5.0
pension credit	0.7
total spent in Scotland	5.7

... implying a UK government surplus of **£4bn** on the services rendered.

The New Scottish Budget

- In 2007/08, Scotland had a budget of **£32.3bn** – of which it raised ~11% (£3.7bn in non-domestic rates and council tax)
- Under our Raise and Remit Model for the same financial year, Scotland would raise 100% of its budget. If the spending pattern remains the same, the new budget would include all the items covered within the £32.3bn budget, plus:
 - social protection, other than state pensions, previously covered by Westminster, such as housing benefit, unemployment benefits, council tax rebate, tax credits, income support, disability allowances etc – £6.9bn
 - areas of ‘identifiable expenditure’ by UK Government in Scotland – £1.0bn
 - areas of ‘non-identifiable expenditure’ by UK Government, previously attributed to Scotland – £1.4bn
 Total: £41.6bn.
- These expenditures are £1bn above the GERS national accounting definition of Scottish public spending (£53.3 vs. £52.3 on GERS p22) – reflecting the TES (Total Expenditure on Services) definition of spending which the UK government uses to record items spent “off budget” or via fiscal slippage (unattributed “accounting adjustments”). This extra spending is not an obligation on the Scottish budget (and may not even have been spent in Scotland), and could be cut if shown to have no particular benefit for Scotland.
- The Scottish Government would now also pay 1% of the *Scottish* budget (£0.4bn) into a UK solidarity fund.
- Hence, under these rules, total spending by the Scottish Government would be:

line item	note	£bn
status quo budget	starting point	32.3
social protection (other than state pension)	previously paid by UK Govt; now SG's responsibility	6.9
re-allocated UK Gov identifiable spending	previously paid by UK Govt; now SG's responsibility	1.0
re-allocated UK Gov non-identifiable spending	previously paid by UK Govt; now SG's responsibility	1.4
<i>solidarity fund</i>	<i>1% of Scottish budget for shared UK pot</i>	<i>0.4</i>
total		42.0

Scotland's New Balance Sheet

- If the Scottish Government spent *exactly* the same amount of money under Raise and Remit as had been spent under the Block Grant, then its overall picture would be as in 2007/08 + the solidarity fund. So, whereas under the block grant system Scotland had a £219m surplus before capital spending, under Raise and Remit she would have the option to run a small surplus or a surplus of around £1bn by cancelling the solidarity fund contributions and eliminating the UK government's slippage (or "off budget") expenditures in a period when the UK government had a significant deficit.
- Following the GERS definitions, if a golden rule was rigorously applied under supervision of the Fiscal Policy Commission, net borrowing for new capital would have been £3.8bn-£4.2bn (2.8% of GDP). That is also smaller than the UK deficit (as a proportion of national income).
- After the UK debt servicing is paid off, that is in steady state, the £1.2bn deficit would become a surplus of £1.4bn, reducing net borrowing for new capital to £2.6bn (1.8% GDP).

Further Adjustments to the Scottish Budget

- It is entirely possible that a Scottish Government funding expenditures in Scotland would find other savings to be made: e.g. in the 'non-identifiable' spending category, or under the TES classification where expenditures are made "for the benefit of Scotland but not necessarily in or for Scotland". For example, in 2007/08, GERS attributes £348m of UK non-identifiable spending on 'recreation, culture and religion' to Scotland. These are exactly the expenditures that the contributions to the solidarity fund/grants commission are designed to cover.
- It is also estimated that Scots working in England (rest of the UK) pay about £900m more in income and other taxes than the rest of UK citizens working in Scotland.³⁸ Once tax is paid by residence, not by work place, this will be repatriated to the Scottish budget.
- The effect of these two adjustments, without any change to tax rates, would be to turn a near balanced budget under Raise and Remit for 2007/08 into a **surplus of £1.2bn** – with an option to increase that surplus further by eliminating the UK government's "off-budget" and accounting adjustments spending.³⁹
- The key point here is that Scotland's budget would be Scotland's responsibility, and Scotland's decision.

³⁸ See Tables 5 and 6, Oxford Economics (2008).

³⁹ The Total Managed Expenditure (TME) definition of public spending, which is a further elaboration of additional expenditures charged to Scotland's account "for the benefit of Scotland, but not necessarily made in or for Scotland", is not used here because it represents charges for general government, including capital usage, and certain adjustments to VAT flows etc, that would no longer be needed under our extended degree of devolution scheme. Such expenditures, even if made, would not now be required.

References:

- Aizenman J, K Kletzer and B Pinto (2007), "Economic Growth with Constraints on Tax Revenues and Public Debt: Implications for Fiscal Policy and Cross-Country Differences", NBER WP 12750, National Bureau of Economic Research, Cambridge MA.
- Aschauer D A (2000), "Do States Optimise? Public Capital and Economic Growth", *Annals of Regional Science*, 34, 343-63.
- Asdrubaldi P, B Sorensen and O Yosha (1996), "Channels of Interstate Risk Sharing: United States 1963-1990", *Quarterly Journal of Economics*, 111, 1081-1110.
- Ashcroft B, A Christie and K Swales (2006), "Fiscal Autonomy for Scotland – A Rejoinder", Quarterly Economic Commentary, *Fraser of Allender Institute*, 31, 54-55.
- Bayoumi T and P Masson (1995), "Fiscal Flows in the US and Canada: lessons for Monetary Union in Europe", *European Economic Review*, 39, 253-74.
- Brueckner J K (2006), "Fiscal Decentralisation Economic Growth", *Journal of Public Economics*, 90, 2107-2120.
- Cerniglia F and R Longaretti (2008), "Federalism, Education Related Public Goods and Growth when Agents are Heterogeneous", Department of Economics, University of Milan-Bicocca, mimeo, September.
- Cuthbert J and M Cuthbert (2010), "Issues on Calman Tax Proposals Still Unresolved", Fraser Economic Commentary, 33 (February), 39-44.
- Darby J, A Muscatelli and G Roy (2005a), "How do Sub-Central Governments React to Cuts in Grants Received from Central Government: Evidence from a Panel of 15 OECD Governments" Centre for Public Policy Research, Paper 1, University of Glasgow.
- Darby J. A Muscatelli and G Roy (2005b), "Fiscal Federalism and Fiscal Consolidation" Centre for Public Policy Research, Paper 2, University of Glasgow.
- Debrun X and K Manmohan (2007), "The Discipline Enhancing Role of Fiscal Institutions", WP 07/171, International Monetary Fund, Washington, DC.
- Debrun X, D Hauner and K Manmohan (2009), "Independent Fiscal Agencies", *Journal of Economic Surveys*, 23, 44-81.
- Egger P and D M Radulescu (2008), "The Influence of Labour Taxes on the Migration of Skilled Workers", CESifo WP 2462, CESifo, Munich (www.CESifo-group.org/wp).
- Eichengreen B, R Hausman and J von Hagen (1999), "Reforming Budgetary institutions in Latin America: the Case for a National Fiscal Council", *Open Economies Review*, 10, 415-40.
- Fatas A, J von Hagen, A Hughes Hallett, R Strauch and A Sibert (2003), "Stability and Growth in Europe: Towards a Better Pact", *Monitoring European Integration 13*, Centre for Economic Policy Research, London.

Feld L P, H Zimmermann and T Doering (2007), "Federalism, Decentralisation, and Economic Growth", Public Finance Group, University of Marburg.

Hallwood P and R MacDonald (2006), "A Restatement of the Case for Scottish Fiscal Autonomy", Quarterly Economic Commentary, *Fraser of Allender Institute*, 31, 49-53.

Hallwood, P and R MacDonald (2009) "*The Political Economy of Financing Scottish Government*" Studies in Fiscal Federalism and State-local Finance, Edward Elgar. Cheltenham.

Hughes Hallett A (2008a), "Debt Targets and Fiscal Sustainability in an Era of Monetary Independence", *International Economics and Economic Policy*, 5, 165-187.

Hughes Hallett A (2008b), "Coordination without Explicit Cooperation: Monetary-Fiscal Inter-actions in an Era of Demographic Change", *Economic Paper 305*, DG-2(Economic and Financial Affairs), European Commission, Brussels.

Hughes Hallett A and J M Lewis (2008), "European Fiscal Discipline Before and After EMU: Permanent Weight Loss or Crash Diet?", *Macroeconomic Dynamics*, 12, 404-424.

Hughes Hallett A, J M Lewis and J von Hagen (2004), "Fiscal Policy in Europe 1991-2003: an Evidence Based Analysis", Centre for Economic Policy Research, London.

Hughes Hallett A, R Kattai and J M Lewis (2007) "Early Warning or Just Wise after the Event?" WP 124, Central Bank of the Netherlands, Amsterdam, January 2007.

Imi A (2005), "Fiscal Decentralisation and Economic Growth Revisited: an empirical note", *Journal of Urban Economics*, 57, 449-61.

Inman R P (2003), "Transfers and Bailouts: Enforcing Local Fiscal Discipline with Lessons from US Federalism" in J Rodden et al (eds) "*Fiscal Decentralisation and the Challenge of Hard Budget Constraints*", MIT Press, Cambridge MA.

Kalemli-Ozcan S, B Sorensen and O Yosha (2003), "Risk Sharing and Industrial Specialisation: Regional and International Evidence", *American Economic Review*, 93, 903-918.

Kirsanova T, C Leith and S Wren-Lewis (2006), "Optimal Debt Policy and an Institutional Proposal to Help in its Implementation", paper presented to a DG-2 Workshop "On the role of national fiscal rules and institutions in shaping budgetary outcomes", European Commission, Brussels and Exeter University (November 2006).

Leeper, E M (2009), "Anchoring Fiscal Expectations", *Reserve Bank of New Zealand Bulletin*, 72, 7-32; also WP 15629, National Bureau of Economic Research, Cambridge MA.

MacDonald R and P Hallwood (2006), "The Economic Case for Fiscal Autonomy with or without Independence", The Policy Institute, Edinburgh.

McLean I, G Lodge and K Schuecker (2008), "Fair Shares? Barnett and the Politics of Public Expenditure", Institute for Public Policy Research, London.

- Melitz J (2004), "Risk Sharing and EMU", *Journal of Common Market Studies*, 42, 814-840.
- Mirrlees J A (1971), "An Exploration in the Theory of Optimal Income Taxation", *Review of Economic Studies*, 38, 175-208.
- Mirrlees J A (1982), "Migration and Optimal Income Taxes", *Journal of Public Economics*, 18, 319-41.
- Mirrlees Review (2009), in two volumes, www.ifs.org.uk/mirrleesReview/publications (forthcoming Oxford University Press, Oxford).
- Oates W E (1972), "*Fiscal Federalism*", Harcourt, Brace Jovanovich, New York.
- Oates W E (1985), "Searching for Leviathan: An Empirical Study" *American Economic Review*, 75, 748-557.
- Oates W E (1989), "Searching for Leviathan: A Reply and Some Further Reflections" *American Economic Review*, 79, 578-583.
- Oates W E (1996), "Taxation in a Federal System: the Tax Assignment Problem", *Public Economics Review*, 1, 35-60.
- Oates W E and R M Schwab (1988), "Economic Competition between Jurisdictions: Efficiency Enhancing or Distortion Inducing?", *Journal of Public Economics*, 35, 333-354.
- Oxford Economics (2008), "Regional Winners and Losers in UK Public Finances", Economic Outlook, Oxford Economics, July 2008 ([www.oef.com/Free/pdfs/ukmpubfinfeat\(jul\).pdf](http://www.oef.com/Free/pdfs/ukmpubfinfeat(jul).pdf))
- Qian Y and B Weingast (1997), "Federalism as a Commitment to Preserving Market Incentives", *Journal of Economic Perspectives*, 11, 83-92.
- Reform Scotland (2009), "Fiscal Powers: 2nd Edition", Reform Scotland, Edinburgh. October 2009 (www.reformscotland.com).
- Reinhart C and K Rogoff (2009), "Growth in a Time of Debt", NBER WP 15639, NBER, Cambridge MA.
- Rodden J (2003), "Reviving Leviathan: Fiscal Federalism and the Growth of Government" *Inter-national Organisation*, 57, 695-729.
- Schneider S (2005), "Human Capital is the Key to Growth" Deutsche Bank Research Report, 1 August (www.dbresearch.com/PROD/DBR_INTERNET_EN-PROD/PROD00000000019_0080.pdf)
- Scott A and A Hughes Hallett (2010), "The UK Government's proposals for the future financing of devolved government in Scotland: an economic assessment", Policy Forum Reform Scotland, Edinburgh (www.policyforumscotland.com/index.php/publication)
- Sinn H W (1994), "How Much Europe? Subsidiarity, Centralisation, and Fiscal Competition", *Scottish Journal of Political Economy*, 41, 85-107.

Steel Commission (2006), "Moving to Federalism-A New Settlement for Scotland" Final Report to the Scottish Liberal Democrats, March 2006 (www.scotlibdems.org.uk)

Stiglitz J E (1982), "Self-Selection and Pareto Efficient Taxation", *Journal of Public Economics*, 17, 213-40.

Taylor, B (2008), "The Unfinished Agenda of Constitutional Change" Occasional Paper 78, David Hume Institute, Edinburgh.

Thiessen U (2003), "Fiscal Decentralisation and Economic Growth in High Income OECD Countries", *Fiscal Studies*, 24, 237-74.

Thornton, J (2007), "Fiscal Decentralisation and Economic Growth Reconsidered", *Journal of Urban Economics*, 61, 416-24.

Von Hagen J and I harden (1994), "National Budget Processes and Fiscal Performance", *Euro-pean Economy Reports and Studies*, 3, 311-418.

Wellisch D (2000), "*The Theory of Public Finance in a Federal State*", Cambridge University Press, Cambridge and New York.

Wildasin, D (2000), "Labour Market Integration, Investment in Risky Human Capital, and Fiscal Competition", *American Economic Review*, 90, 73-95.

Wilson J D (1992), "Optimal Income Taxation and International Personal Mobility" *American Economic Review*, 82, 191-196.

Wilson, J D (1999), "Theories of Tax Competition", *National Tax Journal*, 52, 269-304.

Wilson J D (2006), "Income Taxation and Skilled Migration: the Analytical Issues" mimeo, Department of Economics, Michigan State University, May 2006.

Wyploz, C (2002), "Fiscal Discipline in EMU: Rules or Institutions?", mimeo, Institute for Graduate International Studies, Geneva.

Wyploz, C (2005), "Fiscal Policy: Institutions vs. Rules", *National Institute Economic Review*, 191, 64-78.

APENDICES

ANNEX A: How do the different fiscal regimes work in practice?

1. Block Grant Schemes: the status quo

A block grant system, such as underlies the Barnett formula for example, follows discretionary decisions made in central government without any input from the Scottish government or electorate. The main part of the funding is calculated as the allocation to be made to each government department in turn. In each case, the allocation is calculated as a proportion of the decisions made for the corresponding department in England without making any allowance for whether the conditions that hold in England also hold in Scotland. The proportions used reflect the degree to which each department's activities are thought to be devolved. The formula is well known, but it involves a number of judgments or assumptions which are not generally made public and may be changed unilaterally. The formula for any devolved function or department is as follows:

$$\begin{array}{ccccccc} \text{change in} & & \text{change to} & & \text{associated} & & \text{relevant} \\ \text{the Scottish} & = & \text{the UK} & \times & \text{comparability} & \times & \text{population} \\ \text{department's} & & \text{department} & & \text{percentage} & & \text{proportion.} \\ \text{funding} & & \text{funding} & & & & \end{array}$$

The comparability percentage is the proportion to which the department is considered to be devolved; the other two elements being known quantities. Summing across departments gives the first part to be added to the baseline grant which reflects historical expenditures and, hence, UK spending levels. Two further components, amounting to 18% of total spending, are then added:

1. entitlements such as social security payments and agricultural subsidies which follow standard UK and EU spending codes; and
2. an allowance for the services of central government (defence, intelligence, foreign affairs, the cost of running government) so that every citizen is provided with access to the same level of public services.

Advantages and Disadvantages: The point to emphasise is that the major problem with the Barnett formula regime is not whether it is fair, justified or efficient – although the loss of political support if it is seen to be none of those things could be serious. Instead the real problem is with its properties as a tool for economic management: the poor incentives it generates, and the constraints it places on decision making and good governance.

Second, the funds allocated evidently do not respond to the state of the Scottish economy in any systematic way. The tax raising side likewise follows common UK tax codes. Consequently there is no risk sharing, no way to channel fiscal transfers between regions, and hence little stabilising power in the face of common or regional disturbances. Optimal currency area theory stresses that a currency union between economies with structural differences or different shocks needs to have risk sharing mechanisms in order to provide regional stability. Such mechanisms come through financial integration and fiscal transfers, but not through Barnett except in so far as

the central government expands the grant in the face of economic shocks. But that is not part of the formula. The central government may even reduce its support on a whim, pleading poverty. Thus, in accepting a grant mechanism, the regional government assumes a political risk which might or might not be offset by lower economic risks depending on the central government's attitude to revenue risk. Indeed, in the absence of compensating flows from elsewhere, Barnett could be destabilising if the Scottish cycle got out of phase. At present the Scottish cycle is often out of phase: the correlation with the rest of the UK is just 0.65, which is less than that between many of the economies in the Euro-zone. At the same time, Barnett gives Scottish policymakers no ability to save in good times or borrow in bad times. So there is no scope for stabilising the economy from local sources either.

This inability to shift expenditures between time periods, that is to save in some years but allow deficits in others, also means that the government cannot undertake investment projects without outside help. At the same time the formula evidently delivers the same grant irrespective of the distribution of activity/incomes within the economy, without giving the government any scope to redistribute except at the margin. In short it fails to align the incentives of the decision makers with public preferences, or with the needs of the economy in terms of long term development, stability and growth.

The implication of this last point is that the spending decisions will make an inefficient use of the revenues available. The Scottish spending allocations may or may not achieve the highest returns in terms of public preferences (the electorate will hold the government to account for that); but the size of the budget will not do so, except by chance. Similarly those spending decisions do not take into account the cost of raising the taxes needed to provide them. A general rule of public finance is that efficiency requires that decisions on spending be made at the same level as decisions on taxation, so that the people that enjoy the benefits also bear the costs. They cannot otherwise make rational decisions, balancing benefits against costs, and avoid the incentives for inefficient and profligate spending. Distortions would then appear where taxes or expenditures are too high and affect relative prices. A grant system does not allow those costs to be taken into account: the Scottish decision makers have no option to do so, and the London decision makers choose not to do so. The only way to resolve that issue is to move on to some degree of fiscal autonomy where the requirement to pick both the proportion of tax and spending to be reserved, and the tax/expenditure rates to be applied in the devolved budget, ensures that both sets of policy makers will take the costs and benefits (to them) into account.

2. Assigned Taxes.

The analysis under assigned taxes is essentially the same as that for the Barnett formula. If the Scottish government is unable to issue debt or run a deficit, then its only function is to choose the distribution of expenditures from a revenue total defined by the taxes that arise, are collected and then spent in Scotland.

In effect, all that has happened is the Barnett formula for calculating revenues due has been replaced by the tax code generating the actual tax receipts allocated to the Scottish government. In principle this might involve all the taxes collected in Scotland being assigned to Edinburgh, or only some of them. But the latest national income statistics show that total tax revenues raised in Scotland are currently 6.3% of national income short of total public spending if oil revenues are excluded; or 0.2 % of GDP greater if a geographical share of those revenues is included.⁴⁰ In practice this means that all taxes, *including most* of the oil revenues, would have to be assigned if the government's objective of providing equal public services for all is to be maintained⁴¹. If fewer than that are assigned, as they may be, then a Barnett top-up grant would have to be added. That would make a simple hybrid regime, such as that recently proposed in the Calman report. Germany, Canada and Australia are among the countries that have used this approach.

The figures quoted exclude capital expenditures, which lie outside the Barnett formula and outside the Golden Rule for capital financing employed by the fiscal authorities in London. It would be inconsistent with the Barnett regime, and with the rules already operating in London, to do otherwise.

A second distinction is that the assigned taxes can have tax rates chosen either by the central government or by the Scottish authorities. If the latter is done, the regime becomes one of fiscal autonomy – partial or full depending on how many taxes are assigned. That case is discussed below. But if the former is done (central government chooses the tax parameters), then there is no devolution since there is nothing for the Scottish policy makers to do. That brings us back to a block grant scheme, with a few crucial differences. The discretionary decisions are all with the central government and, facing a hard budget constraint, the fiscal discipline on the Scottish government would be strong. But there is no fiscal responsibility since the Scottish government will have had no hand in the raising of its revenues. It has no specific levers to manage growth and development, and the spending decisions are likely to be as inefficient and distortionary as they were in the Barnett case. However, some of the imperfect transparency and ambiguities of the Barnett formula are resolved since the tax codes are public property and known. On the other hand, accountability rests with central government as it did before; and the regime would be consistent with EU rules since there are no deviations from national tax rates. But if the assigned taxes are under Scottish control with a top-up grant to maintain equal services, then the situation becomes quite different. Any such scheme would be illegal under EU rules for three reasons: because it offers deviations from national tax rates, because there are equalisation payments, and because the centre can influence tax decisions by setting reference rates. In other words, assigned taxes put Scotland in cleft stick: if Scots choose their assigned taxes, they violate EU rules on state aid. If they don't, they fail to satisfy the need to devolve some decision making power.

Apportioned Taxes: A third difference is that, under assigned taxes, Scotland would have to create a Treasury function to determine what tax revenues actually arose in Scotland as opposed to outside. To get round that problem, Scotland's share of each UK tax might simply be allocated

⁴⁰ Figures for 2008: see GERS (2009).

⁴¹ In other words, a full assignment is going to be necessary to resolve the political difficulties caused by the equity issue. By contrast, if oil revenues are reserved, then the assigned taxes would still have to be topped up with a grant from central government equivalent to 13% of total revenues (exceeding the current imbalances on 2007/08 figures).

in fixed shares as happens in Germany and, in some cases, Australia. This would be a convenient simplification because it gets round the problem of having to assess exactly how much had arisen in Scotland (very difficult to do, especially for profits, corporate/self-employed incomes, sales taxes, and savings). But apportioning taxes in this way would take us right back to dependence on the performance and policies of another economy, over which we have no control.⁴² Assigned taxes are therefore likely to create pressures for direct representation of the regions in the policy making of central government. The way to avoid that is to create a measure of fiscal autonomy.

The fourth difference from Barnett is that the absence of risk sharing properties could become a serious problem. There are no automatic flows to/from a central budget; and tax revenues are by their nature uncertain as they depend on (are volatile functions of) the state of the economy. On the other side, public services are essentially a contractual relationship with the public and require a steady flow of funds. They cannot easily be turned on and off, or reversed, as funds fluctuate; nor should they be. So, what is a government that cannot borrow supposed to do when the economy goes into recession or tax revenues fall? In this regime, services would just have to be cut back. There might be some relief in that, after a time, governments could build up surpluses from good times and use this war chest to stabilise the economy in bad times. But to get to that position, and to keep the war chest built up, they would have to adopt more conservative policies and *lower* public spending on average. The same is true if the government tries to borrow against future tax revenues because of the need to pay interest. So this opportunity is unlikely to prove useful.⁴³

Thus assigned taxes appear to represent an unstable equilibrium that will drive us either back to a Barnett regime, or to greater fiscal autonomy. On one side, London would have no control over the appearance of Scottish debt and would therefore try to minimise the tax assignments. On the other, the need to have the debt managed and eventually paid off might persuade them to grant some autonomy.

3. Partial Fiscal Autonomy

In this regime, some taxes and expenditures are assigned to the regional government and some to central government. This creates a central budget into which regions pay, or receive payments from, on an automatic basis – in each case at rates chosen by the central government. There will also be separate budgets at the regional level since not all taxes/expenditures are centralised. Those taxes/expenditures not centralised will be charged/spent at rates chosen by the regional

⁴² In moving from a scheme based on actual taxes in Calman's proposal, to one based on forecasted taxes as a proportion of their UK counterpart, the recent government White Paper has reverted to an apportioned taxes model with no ability for Scotland to take decisions that would affect her economy. See Annex B for more detail.

⁴³ There is some evidence that the outcomes might be even more unfavourable. Regional governments are often found to have a "flypaper effect" in which their spending increases faster with an increase of revenues from central government than they do with an increase in local revenues. But Darby et al (2005a,b) identify a "reverse flypaper effect" in which regional governments react to cuts in their central funding by cutting their expenditures, rather than raising revenues locally, even when the opportunity to raise local revenues exists. This has a cascade effect: first the central funding is cut, and then regional governments react by cutting their spending as well. Moreover these cuts tend to focus on capital spending, rather than on services, which brings long term damage to the local economy.

government. But there are no grants or discretionary payments made to or from the centre. Replacing them with an upper level of federalist transfers (vertical imbalances) to the regions is possible and would increase efficiency since those components will add to the system's ability to adapt to local conditions without removing its ability to undertake longer term redistributions.⁴⁴

At first sight the reversal in the pattern of assignments may appear to give a financing system that is similar to the assigned taxes regime. But assigning taxes/expenditures from the regional governments, instead of to them, creates two very important differences. First it ensures that some tax and expenditure functions are always carried out from the centre, with the result that there will always be a central budget that is linked to the regional budget, and to the regional economy through the taxes raised and expenditures made in that region. That ensures that the central financing, and the transfers to/from the regional economy, will automatically react to and influence economic conditions in the regional economy as well as those in the national economy. Risk sharing, and the possibility of redistribution for restructuring, is therefore assured. This, as we saw, cannot be guaranteed by assigning taxes to the regions; and certainly not in the Scottish case because all the taxes available would have to be assigned if the government is to reach its goal of providing equal public services for all – in which case there is no central budget left. In that case an equalisation grant, population based and not linked to economic conditions, would be needed and that could be EU illegal on state aid grounds. For that reason fiscal autonomy would appear to be superior to simply assigning taxes.

The second difference is the taxes and expenditures assigned to the central government can be of the same type, but charged/spent at different rates to those assigned to the regional governments (as with income taxes in the US); or they can be of different types and those assigned to regional governments set at rates that differ across regions (as with sales taxes in the US).⁴⁵ Obviously tax and expenditure rates in this world can be set *either* separately by the regional and central authorities for regional and federal tax/expenditure rates respectively (in which case those rates will almost certainly differ from region to region, as well as between regions and the centre); *or* jointly; *or* by the central authorities alone in which case the regional rates are likely to be similar across regions if different from the federal rates. The latter is fiscal federalism as practiced in Germany, Australia and South Africa. The first case – different rates determined by each regional authority separately is partial fiscal autonomy, as practiced in the US, Canada, Switzerland, and some parts of Italy. Federal tax and expenditure rates will be decided by the central government in either case: ie by the UK government to suit itself and the interests of other regions. And the choice of which taxes are to be centralised (reserved) or devolved is made jointly. Hence discretionary choices appear at both levels of government in the partial fiscal autonomy regime.

⁴⁴ Long term redistributions are created by choosing the federal tax and expenditure functions such that there is a net transfer to certain regions on average and, when the central budget is balanced, away from others. If there is no such net transfer, then only regional stabilization is possible.

⁴⁵ Note that VAT cannot be assigned to Scotland at rates different from other regions as that would be illegal under EU competition rules. But it could be assigned as local VAT at common rates, as part of an assigned taxes regime.

How do the financing and automatic transfers actually work under fiscal federalism? Suppose there are two regions at different stages of development and different points in their economic cycle because their cycles are out of phase. To the extent that there are devolved taxes and expenditures, both regions will run their own budgets and finance their expenditures from taxes collected locally. But the region enjoying a relative boom (with output above trend) will have a stronger budget, perhaps a surplus, because tax revenues are above trend and cyclically sensitive expenditures (such as business support or social projects) below trend. Meanwhile the region in relative recession will have below average tax revenues, above average expenditures and a potential budget deficit. If nothing is devolved, these would be the contributions made to the central budget. But if certain taxes/expenditures are devolved, those taxes and spending activities will stay at home and arrangements will have to be made for the recession region to issue debt (albeit temporarily) and for the boom region to acquire assets.

However, there is also some compensation for the recession region from the central budget. Federal taxes from the boom region will be higher than usual, and federal expenditures in that region lower, so that region will be transferring some of its surplus to the centre. The recession area will be transferring lower taxes but drawing on above average expenditures from the centre. It will be receiving a net transfer from the centre. In effect, if the centre balances its budget, that implies an indirect transfer from the surplus to the deficit region. [And if the centre does not balance its budget, there is still a net transfer (vertical imbalance) in addition to any long run transfers that may have been built in]. Moreover these transfers are automatic and symmetric over time. So there are no monitoring or decision lags, no need for parliamentary consent on either side, and no biases except in so far as central government chooses to build in long run transfers “on average” to reflect needs. The recession region therefore receives two expansionary boosts; one from the local deficit, one from the net transfer in federal expenditures. Likewise, the boom region gets two contractions to slow it down; from the local surplus and from the transfer to the federal budget. Moreover, for a given federal tax/expenditure code, the stabilising power of this regime becomes larger as more tax and spending instruments are devolved. Thus, fiscal autonomy deals with uncertainty by taking regional surpluses or deficits into the federal budget, and recycling them as transfers from those in good times, relative to the average, to those in bad times (relative to that average). These transfers continue to flow whatever the federal average.

The disadvantage of this scheme is that it might involve little input from Scottish policy makers. It relies heavily on automatic movements, and has little flexibility to deal with special investment projects, changing incentives, distortions, or an inefficient distribution of spending or taxation in a particular region. These matters can be addressed at the federal level; but not in an individual region – except in so far as a small redistribution element via the central budget can be brought to bear. On the other hand, the system is demonstrably as fair as is possible, short of taking into account all the structural differences between regions. That should help to extend its political support beyond Scotland. It is also quite transparent, but leaves the door open for disagreements over accountability: central government is accountable for the functioning of the system as a whole, but it is not clear who is accountable for allocating taxes or expenditures

between devolved and centralised governments. It also permits risk sharing. And it allows inter-temporal smoothing across the cycle, but only limited inter-temporal substitutions for investment or income redistribution purposes.

The model here is clearly the fiscal systems in use in the US and Canada, although the types and proportions of taxes and spending to be devolved to Scotland might be very different.⁴⁶ The discretionary decisions now lie separately with central government and the Scottish government – each with their own budget to balance, and each with their own responsibility for choosing tax and expenditure rates to achieve that. So each government has to be held accountable for its own part of fiscal policy and discipline, rather than the UK government guaranteeing both parts as in the previous cases⁴⁷. But to prevent any implication that the central government might or would guarantee the deficits of regional governments, which would give regional governments an incentive to free-ride/ relax their discipline, several countries (Canada, Chile, Sweden, Belgium, Germany, Hungary) have found it helpful to set up an independent debt management authority to oversee, regulate and possibly enforce the prudential issue of debt within their regions. However it is done, Scotland would have to have the ability to issue debt in this regime, but without presuming any guarantees (or a bail-out) from London.

An interesting variant emerges at this point. Most Canadian provinces float bonds on the US bond markets in order to finance their debt, without any explicit balanced budget requirement or hard budget constraint of the type that most US states have written into their constitutions. The fact that the Canadian provinces can expect no bail-out facilities (the US has no responsibility for Canadian provinces, and Ottawa's permission is not needed for the loans) may in fact provide its own fiscal discipline. Scotland would be in a similar situation, with the bonus that if she stays in the UK there would be no exchange rate risk in loans raised in the UK. That would make it easier to apply that discipline.

That said, fiscal autonomy would be superior to assigned taxes. It is equally transparent. But because parts of it would be chosen directly by the Scottish Parliament it should command much wider political support. The system is also demonstrably fairer since the devolved part is now chosen to take explicit account of structural differences and the circumstances of each region. For that reason, the fiscal decisions should be more efficient, more accountable and with fewer distortions because incentives are closer aligned with the needs of the economy (those who spend the taxes, raise them). Finally risk sharing is stronger since, with identical federal tax and

⁴⁶ In the US, about 40% of taxation is devolved to the states which chiefly rely on sales, property and local income taxes. The remaining 60% of revenues go to the federal government using conventional taxes. Canada is similar: but has 50% of taxation devolved, a greater role for resource taxes split between federal and provincial authorities, and a complicated set of equalization payments imposed between the provinces which has been adjusted many times as perceptions of what each province could expect have changed. Political support may be fickle at best. Switzerland, by contrast, has 23% of taxes levied at the federal level, 77% by the cantons, and equalization created through joint tasks dependent on federally supplied resources. All grants are conditional on outcomes, so there is no dependence.

⁴⁷ The distinction between where the discretionary decisions lie, is important because it explains when fiscal autonomy or block grant/apportioned taxes will offer more fiscal discipline (Ashcroft et al (2006) vs. Hallwood-MacDonald (2006)). Evidently the latter imposes a hard budget constraint on Scotland, but risks a looser one in London. The former imposes a looser constraint on Scotland, and the harder one in London.

spending codes, we would see the same automatic inter-regional transfers. And by picking the federal tax and spending functions appropriately, we can again create redistributions for investment or social projects through the federal budget. Thus, apart from making arrangements to ensure fiscal responsibility at the regional level, the only disadvantage is any possible conflict with EU rules on state aid. This may not be a problem. Although the regional tax rates may now differ from the national average, the automatic transfers from centre to region are temporary and remain a partly discretionary mechanism which is not operated by central government to offset systematic shortfalls in local taxation.

5. Full Fiscal Autonomy within the UK

The last regime is full fiscal autonomy. In this case, all fiscal functions would be allocated to the Scottish government, to give the government complete control over the raising and collecting of taxes and how and where they are spent – including the setting of tax/expenditure rates, bands, and tax bases, and extending the government's remit to inheritance tax, corporation tax, other business taxes, carbon and natural resource taxes and the like. There would be no central budget: and hence no inter-regional transfers, and no risk sharing with other regions in the UK⁴⁸, except is so far as the Scottish government might find it convenient to subcontract to or run certain activities (such as defence, intelligence, foreign relations, financial oversight, parts of social security or pensions) jointly with London. There would be no central government guarantees on any debt the Scottish government might issue (unless the London government found it convenient to offer bail-out facilities rather than suffer the financial fall-out from a default in Edinburgh). And Scotland might have to accept risk premia on her interest rates in bad times, or if her debt management/deficit discipline proved to be weak.

This is not such an unusual or radical departure from current practice as it might seem. In fact, the Channel Islands, Isle of Man and Gibraltar already have such a status, as did Scotland in the 17th century. And very similar frameworks were agreed, but never implemented, giving Ireland and also Scotland in effect full control over their taxes and spending in the home rule bills of 1912-13. The Basque and Navarre regions in Spain, and South Tirol in Italy enjoy the same kind of status with the twist that they pay fees to the central government for common services – thereby eliminating any possibility of a conflict with EU rules on state aid since, even if there are some short run compensating flows, the centre cannot influence policy decisions at the regional level at all.

This regime is of course an extended case of the partial fiscal autonomy. So there are very few changes to the implications except as a matter of degree, or in the operational constraints that policymakers face from other parts of the economy. The four substantive changes are:

⁴⁸There would still be risk sharing via integrated capital or financial markets, and via loans/credit channels. Studies have shown that these channels supply the larger part of risk sharing within currency unions (80% in the US or Canada; and half that in the UK), but much less outside [Asdrubaldi et al, 1996, Kalemli et al 2003, Melitz 2004].

- There will be **no transfers** between regions or redistributions from the centre, since there is no central budget. Risk sharing, insurance against bad times and support for investment or development on a needs basis will be less therefore.
- The **discretionary decisions**, accountability and need for fiscal discipline now rest with the Scottish government. That raises the question of whether new institutions are needed to reinforce that discipline and manage public debt.
- Fiscally independent countries in a monetary union have typically found that they need to **use their fiscal policies more aggressively**, and with larger interventions⁴⁹, to achieve the same level of performance because they lack the additional instruments of monetary policy or an exchange rate to help out. This must be especially true for small economies, because they are too small to influence the union-wide monetary policy in their favour.
- Again **the need to reinforce fiscal discipline** appears to be key, as is the possibility that more aggressive fiscal policies will work against the common monetary policy. Debt targets have been suggested as a convenient way to reinforce discipline, reduce those conflicts, and moderate the swings in policy, without sacrificing internal consistency.⁵⁰
- Given the first and third point, there is a need for a mechanism to ensure consistency and **coordination** across UK macroeconomic policymaking.

ANNEX B: The current proposals

The astute reader will have noticed that the UK government proposals have switched from one of assigned taxes in the Calman report, to one of apportioned taxes in the White paper. This is what always happens once the controlling Treasury has to face the problems of implementation: how to deal with jurisdiction disputes and compliance issues; how to measure what taxes have actually arisen in the Scottish tax area when firms, people and savers operate in more than tax region; how to deal with flipping/gaming the system; how to avoid having to set up and pay for a Scottish tax service; how to limit volatility and the risk of policy conflicts between different parts of the UK, and so on. Resolving those issues means creating a revenue mechanism that does not depend on Scottish variables, beyond the tax rate, as we noted above.

Strictly speaking of course, Scotland can still change her part of the combined income tax rate. But her ability to do so is limited by tax mobility and competition; and we have to face the fact that if we want to raise revenues, it must be done by raising the Scottish tax rate. There is no way of doing that in a way that would raise the growth rate (the Scottish budget is otherwise invariant to Scottish variables).

Conversely, there is nothing one can do to increase growth, jobs, incomes, or revenues except to lower tax rates. But that will lower spending by a smaller Calman share, “s” below, times the

⁴⁹ This is a frequent observation: see Hughes Hallett et al (2004), Hughes Hallett and Lewis (2008).

⁵⁰ See Hughes Hallett (2008a, b).

revenue from same level of UK income taxes (since Scotland cannot borrow and is too small to affect UK income levels or taxes materially by improving her performance). In other words, spending would have to go down faster than any income increases generated from lower tax rates could raise revenues. Notice also that, even if there were income increases from lower tax rates, the additional tax revenues would go to the UK Treasury, not the Scottish government, since what gets credited to the Scottish budget is the Treasury's forecast (which is independent of the level of Scottish incomes), not the subsequent tax flows.

The upshot is, the Scottish government is in a cleft stick; it is damned if it tries to secure growth and jobs by lowering taxes and damned if it tries to do so by raising taxes to increase spending on infrastructure, new industries, or R&D/innovation spending.

A simple forecasting model that captures these features is as follows. It is presented here for the case in which Scotland keeps her part of the tax rate at 10p in each tax band. The UK components would then be 10p, 30p and 40p in each band in turn. Based on those figures, Scotland's share of all income tax receipts raised in Scotland would be 44%: see (2) below. At the same time, income taxes raised in Scotland are 7.2% as a share of income taxes raised in the UK (based on GERS data for 2003-05).⁵¹

The forecasting model for Scottish income tax receipts (at the 10p rate) then becomes:

$$T_{sc} = 0.44(0.072)Y_{UK} \quad (1)$$

which is certainly simple. But it doesn't allow Scotland to influence anything except the x_t figure defined below (it is the potential variation from the 0.44 figure that lies in the hands of Scottish policymakers). Hence there is no chance of Scotland trying to lower taxes, or of getting into an argument about whether to do so would improve growth, jobs and revenues or not, because they couldn't influence the forecasts and hence the budget position if they did.

Where did the figure 0.44 come from? The formula evidently is

$$w_1 \left(\frac{t}{t+.1} \right) + w_2 \left(\frac{t}{t+.3} \right) + w_3 \left(\frac{t}{t+.4} \right) + \frac{1}{2}(1 - w_1 - w_2 - w_3) = 0.44 \quad (2)$$

where t , the Scottish rate of income tax, has been set at the baseline value of 0.1 to get 0.44 on the right, and we have assumed that the Scottish government cannot touch the rate of income tax on savings and dividends. The w_1 , w_2 and w_3 terms are the proportions of total income tax arising from the basic, higher and super-tax bands. UK national accounts for 2007-08 give those proportions as 0.57, 0.30 and 0.02 respectively (the last inferred from a savings-dividend proportion of 0.11). That doesn't give 0.44 exactly as claimed. But if we adjust to 0.66, 0.25 and 0.00, the minimum change, we get 0.4375. So it is approximately right. The point here is that not only are

⁵¹ It appears that this figure may have risen slightly, to 7.4% in 2005-08: GERS, June 2009.

Scottish income levels are lower than the rest of the UK on average, *but the income distribution is visibly worse*. Scotland has 9% more people in the low tax bands, 5% fewer in the 40% band and zero in the top band – with the implication that Scotland has 2% less wealth per head.

This now tells us what the net the net subtractions and additions credited to the Scottish budget would be. The budget would now be the old Barnett grant minus the expected revenue at 10p, plus the expected revenue at the Scottish rate t :

$$Grant_t + [x_t - 0.44](0.072Y_{UK}) \quad (3)$$

where x_t is just the left hand side of (2) with t set at whatever rate the Scottish parliament has chosen. Since the Scottish budget is determined by the forecasts given by these formulae, and not actual outturns, and since Scotland's economy is too small to have any material effect on Y_{UK} , it is easy to see that the Scottish government can affect nothing in its budget except x_t . It therefore has no incentive to do anything other than set $x_t=0.44$, or $t=0.1$, for because of the cleft-stick problem described above. The 10p variable rate is unusable, and the 3p variable rate has gone.

So, there is even less devolution than before. This is because, under the 3p regime, you could vary the tax rate without affecting the rest of the budget and enjoy the benefits directly. Under the new regime, you cannot change your rate without reducing revenues; and you wouldn't enjoy the benefits even if you did – unless the extra growth in Scotland succeeds in driving the whole UK, in which case Scotland would get just 3% (ie 0.44×0.072) of the gains. This shows just how much devolution has been cut back. In fact, since the Scottish government has no ability to influence the economy, accountability would end up being handed back to the UK government – not to the Scottish Parliament.

To confirm this, define the Calman share, the left hand side of (2), as s :

$$s = w_1 \left(\frac{t}{t+.1} \right) + w_2 \left(\frac{t}{t+.3} \right) + w_3 \left(\frac{t}{t+.4} \right) + \frac{1}{2}(1 - w_1 - w_2 - w_3) \quad (4)$$

Changes in s can only be obtained by changing t . It easy to check that

$$\frac{\partial s}{\partial t} = 2.5w_1 + 1.875w_2 + 1.6w_3 > 0$$

for any feasible values of w_1 , w_2 and w_3 . (We have evaluated this expression around the current value, $t=0.1$, but it will be positive for any t value). So the only way you can increase revenues is to *increase* t ; not by lowering taxes to increase Scottish jobs, incomes, or growth because the extra revenues would go straight to the rest of the UK. At the same time, lowering tax rates would lower domestic revenues, and hence spending, with any long term Laffer-type growth effects (if they exist) again going to the UK Treasury. There is nothing you can do to improve the economy. Your best strategy is to keep the Scottish rate of tax fixed where it is; which means

the 10p variation is unusable, and accountability for the Scottish economy is back with the UK government.⁵²

ANNEX C: Examples where tax autonomy allows better designed taxes

Using the papers from the Mirrlees report, taxes designed specifically to fit Scotland's industrial and economic structure, and demographics, can be made to increase the impact of fiscal policy on growth and employment. At the same time, the review shows how taxes tailored to Scotland's circumstances can often be used to raise extra revenue without damaging incentives, distortions or adverse social consequences. For explicit examples, see Mirrlees Review (2009).

ANNEX D: Tax incentives for skilled migration and the location of firms

This section contains reviews the evidence on the importance of domestic tax rates for location decisions by firms and households with skilled workers, in particular the empirical evidence to give an idea of whether variations in the tax burden could be an important influence on location decisions in practice. This evidence is the basis for suggesting knowledge tax subsidies and other measures to promote locational competition and greater efficiency.

On this question the available evidence comes mainly from theoretical studies⁵³, while empirical work is relatively scarce. These studies typically distinguish between skilled and unskilled labour with higher marginal product of labour and preferences for work among the former. There is free entry and exit between countries. Taxes are progressive and levied by the country where income is earned (fiscal autonomy is possible). It then turns out that a single global tax regime promotes equity, but local taxation can reap greater efficiency if the spillovers are not too large (reflecting the difference between optimising global averages and the weighted sum of individual performances – the latter is Pareto optimal, and therefore offers better outcomes for the countries or regions in the system as opposed to a better average performance). However, a suitably well designed system of country specific tax credits and exemptions can be introduced to the global regime so as to capture the gains of the Pareto optimal (local tax rates) regime. This shows that differential tax rates and subsidies which alter relative wages to encourage migration of skilled labour to where it can be used most effectively is the key to the improved performance. One way to achieve that would be to offer reduced taxes (for a period) to knowledge workers or workers with specific skills as the Netherlands does, or as the Canadians and Australians try to do in their immigration criteria. Other results also emerge. Small open economies such as Scotland will choose not to levy additional taxes on the skilled (as noted above in the discussion of the Calman and White paper proposals), preferring instead to compete with a less progressive tax schedule

⁵² Cuthbert and Cuthbert (2010) have the same result given the feasible parameter values.

⁵³ Mirrlees (1971, 1982), Stiglitz(1982), Wilson (1992, 2006), Wildasin (2000) among others.

against the larger, more closed economies. This gives some scope for using the tax code to attract migrants in the numbers and with the skills required to increase growth and jobs.

To get an idea if these effects would also be important in practice, Egger and Radulescu (2008) estimate the actual migration responses to tax burden differentials across country pairs from a sample of 49 OECD and near-OECD counties in 2002. Tax burden differentials are defined as the income taxes (plus social security taxes) paid at average wages as a share of total wage costs (including the employer's social security contributions); and similarly, the share of nonwage costs paid by the employer in total wage costs. A second tax burden differential is calculated for wages at five times average wages, to represent the high skilled workers. And there is an index of tax progressivity. It is argued that FDI flows will influence migration flows, that geographic distance, language and cultural differences, and that wage or unemployment differentials may also play a role. So these things are controlled for. Finally the study distinguishes between migration into/out of the country vs. inter-state or inter- province migration within the country. The results show that for the average OECD economy, a decrease in the differential in income tax shares borne by employees at home of 1% point will increase the probability of a migration inflow of expatriates by 9.6%; that is, the average country could expect an increased inflow of 9.6% as a result. Similarly, it would induce an internal (inter-state) inflow of high skilled migrants by 8.3%. These are the effects of changes in the relative tax burden at average wages. The effect of lightening the burden of employer nonwage costs would be half that, but a reduction in the index of tax progressivity (ie on the high skilled workers) would be three and a half times as big.

Translating those probability changes into physical numbers of migrants, assuming that these results apply equally to each OECD country and noting that Scotland has 13.5% of the population of the average OECD economy, we should therefore expect each 1% reduction in the income tax burden in Scotland relative to elsewhere (including the rest of the UK) to attract 720 expatriates and 150 high skilled regional migrants; and 3½ times that (roughly 2700 expatriates and 500 internal) if this is achieved by lowering the degree of progressiveness in the tax regime. If this were to be done entirely by changing income tax rates, as opposed to changing tax bands or allowances or the tax base for example, it would require a reduction in the (Scottish) average rate of income tax of just 1.128p in the Pound. Using half the new Scottish tax rate could therefore be expected to bring in roughly 4000 new skilled migrants therefore; or 14400 if this change corresponds to making the tax schedule 1% less progressive than elsewhere. While such inflows would bring a welcome addition to the workforce, and make a great deal of difference to the Scottish economy, they are hardly the stuff to scare neighbouring economies into thinking of predatory behaviour or “a giant sucking sound”.

ANNEX E: A Fiscal Policy Commission for Scotland, how would it work?

The Fiscal Policy Commission's task would be to provide an informed and independent assessment of the fiscal position and general prospects for the Scottish economy, covering the outlook for public finances, financial conditions more generally, and the main targets of economic policy. This would bring fiscal policy framework back to the spirit of a system of rules that safeguard solvency and efficiency, without losing the ability to apply discretion and judgment. More importantly it would be forward looking. And by entrusting the analysis and judgement of sustainability to an independent commission, it would solve the basic credibility problem of any fiscal regime; namely that governments are left to judge the quality of their own policies, especially those with financing implications that last long after the next election or elections. In this proposal, the proper balance between our long-run interest in sustainability and short-run obligations and opportunities offered by fiscal policy is preserved by the independence of the body making the assessment from short-term political pressures.⁵⁴

The Fiscal Policy Commission would be created by and report to the Scottish Parliament, which would also provide its resources. Its members should be experts on public finance and public finance management of high professional standing. Membership in the Commission need not be a full-time activity for all members; although the chairperson, at least, and perhaps one other should have full-time professional appointments. The Commission should have a small staff/secretariat and have guaranteed access to all relevant information at the national and UK levels. The Commission should also have the right to use the services of Audit Scotland and the government economic service to support its work.

The idea of creating yet another institution may seem unattractive. The Scottish government already has a network of advisory groups with overlapping policy responsibilities. That suggests fewer rather than more institutions or policy-making bodies would be helpful. But in the case of fiscal policy, currently based on unexplained Barnett formula decisions made by the UK Treasury, and likely to change to an arbitrary mix of "guided" fiscal autonomy, limited borrowing and a Barnett grant, there is a obvious lack of transparency which makes fiscal policy utterly opaque to the public. Others may find the idea of delegating any authority over public finances – historically the core of parliamentary rights – to an independent commission to be incompatible with modern democracy. These criticisms must be taken seriously. It is important to distinguish between the oversight, monitoring and advisory role, from an executive or operational role. In our proposal, the Commission would have *none* of the latter. On the other hand, in a world where regulatory capture and self-interested politics are all too possible, if not likely, a Fiscal Policy Commission would make it necessary for a government that wishes to deviate beyond the limits of what an independent professional authority regards as sound to

⁵⁴ This discussion draws heavily on work done for countries in a different currency union, the Eurozone: Fatas et al (2003). Similar proposals will be found in von Hagen and Harden (1994), Eichengreen et al (1999), Wyplosz (2002). More recent discussions can be found in Wyplosz (2005), Debrun et al (2007), Leeper (2009). Many countries now have such a commission: inter alia, Belgium, Canada, Chile, Germany, Hungary, and Sweden.

defend its plans in public. In that sense, a Fiscal Policy Commission would improve both transparency and the functioning of democracy. Hence, the delimiting of the Commission's authority and remit is the key issue here.

A clear mandate: safeguarding sustainability

The Fiscal Policy Commission would have the sole statutory task of safeguarding the sustainability of public finances in Scotland. Since the Commission would have no responsibility for monetary affairs, inflation or financial stability (that is the task of the Bank of England), and since the Commission would have no *operative* role in fiscal policy, such as setting taxes or public expenditures, the Commission would have no need of secondary objectives such as supporting the general economic policies in Scottish government. Within the overall macro-economic framework of the UK, the function of the Commission would be to make explicit the implications of the government's inter-temporal budget constraint. To fulfil its task, the Commission would have to assess the financial position of the government in all relevant aspects, to produce forecasts of future financial developments and, on this basis, to evaluate the risk of future fiscal crises.

The sustainability of public finances, like that of price stability, varies with circumstances over time and across countries. There is no unique definition of sustainability for all circumstances and times. An important part of the Commission's task would, therefore, be to develop a framework for the assessment of public finances and for making forecasts and judgements. But the Commission would probably not settle on a unique test for sustainability. And there is no need to do so, since it would not be charged with implementing the policies it recommends.

The fact that the Commission would not have the authority to set fiscal policy instruments is key for the legitimacy of the arrangement. As indicated above, the right to determine the level and distribution of taxes and spending lies at the heart of parliamentary democracy. In this context, the Commission's mandate is to make the limits to fiscal policy choices explicit. This is a legitimate interest for all in the UK; and it may be assumed that national parliaments, by agreeing to remain in the Union, agree to accept those limits. Thus, the creation of a Fiscal Policy Commission does not take sovereignty away from a national government given what is already implied by being in the UK.

Note that the Commission would be concerned with the sustainability of public finances, not their size or effect. That is, it would be concerned with the *differences* between revenues and spending; not with their levels, or the proper size and structure of the public sector.

Method of operation: the assessment process

A Fiscal Policy Commission can be considered as a referee in the budgeting process. The Scottish government would have to submit its annual and medium-term fiscal plans to the Commission in the early phase of their budgeting processes, perhaps in March or April of the year proceeding the budget year under consideration. The Commission would judge the

compatibility of the change in government debt implied by these plans, with the sustainability of the country's public finances. Its judgement would take into account past and current economic performance and the medium-term outlook of the economy, as well as the past fiscal performance of its public sector. The Commission would issue a veto warning if it came to the conclusion that the government's fiscal plans were not sustainable in the longer term. In this case, it would demand adjustments from the government and it could make recommendations for such adjustments. The Commission would deliver its warnings in public within two months after submission of the national fiscal plans to ensure that the government could adjust its budget in time. The Commission could also make a public assessment of the adjustments proposed by the government.

In those cases where the Commission did not issue a veto on the government's fiscal plans, it could deliver its report at a later date, but no later than October. With this deadline, Parliament would be informed of the Commission's assessment by the time it votes on the annual budget.

During the course of each fiscal year, the Fiscal Policy Commission would also monitor the development of public debt to see whether the government had complied with their plans and whether any slippage had arisen which might have damaging consequences for sustainability. The Commission would comment on such situations in public and admonish the government for deviating from their original plan, especially if the sustainability of public finances were at risk. We suggest that this should lead to two smaller reports: one reviewing aims and guidelines for fiscal policy in the early stages of the fiscal year, and another mid-year assessing the nation's fiscal health, general prospects and likely future fiscal position given current policies.

There is an issue of the definition of government debt, the main focus of the Commission's assessment. The Commission would define deficits on an accruals basis, implying that certain items such as privatisations, receipts from special purpose vehicles, gross operating surpluses/deficits of statutory bodies, capital transactions, or changes in the value of foreign-currency denominated debt, which are often taken to be "off budget" are included. The constraint created by the Commission would, therefore, be more binding than many self-enforced limits. The Commission should also take a long run view in its assessment of sustainability, including, for example, pension liabilities or hidden guarantees of the public sector.

To fulfil its task, the Commission would need to produce an annual report on the sustainability of public finances. Obviously, this could be very short if the Commission foresaw no problems. Without prejudice to its independence, the Commission could and should allow the government (especially with respect to guidelines for its aims and objectives) and other institutions (such as the Bank of England, the financial stability agency, the chief economist, trade unions or employers groups) to participate in its assessment, for example, by holding hearings with experts and representatives of the relevant bodies. And as noted, the Commission should have access to and use all relevant information for its assessments.

To involve the public in the process as far as possible and to avoid giving the impression that the government and the country were being judged by an institution far removed from the electorate, the Commission would deliver its report and especially its veto warning on the government's fiscal plans in a public forum. Bringing the Commission's activities and assessment to different locations around the country would enhance the political ownership and public support of the process.

Credible enforcement

Under the limited fiscal autonomy to be expected after the Calman report, Scotland will have an obligation to safeguard the sustainability of her public finances. If the Commission has the mandate to define what sustainability means and implies for fiscal policies in the short run, this obligation implies that the Scottish government is de facto committed to implementing the Commission's judgements and recommendations. The question remains, how this commitment could be enforced in practice. The current framework contains two mechanisms: peer pressure and the possibility of withholding elements of the block grant if Scotland were to run excessive deficits.

Being untried, the effectiveness of these enforcement mechanisms must remain in doubt. It must be clear from the fiscal policy experience in the Euro-zone, that neither peer pressure nor the prospect of financial penalties has worked very effectively in Europe – although there is some evidence that they have had some effect in the small EMU states where the risk of being “too small to survive liquidity crises” poses a real and effective threat. Perhaps the same might be true in Scotland. But the experience of Greece, where the perception that big brother (in the EU) would prefer a bail out to the consequences of a default, shows that this is not a strategy to be relied upon.

It is also clear that the Commission could not impose penalties itself as it has no legitimacy as a supra-government agency. Nor could it impose its judgements by legal means or via Audit Scotland. Judgements in a “sustainability court” would always come much after the fact, and the judicial process would not be able to impose timely corrections to policies deemed non-sustainable. The Commission, in contrast, would work in a much more forward-looking way, signalling risks of fiscal crises before crisis hits and demanding policy adjustments that prevent crises. Thus, and in contrast to a court that judges what governments have done, the Fiscal Policy Commission would also judge what a government intends to do and what that means for future fiscal policies. Furthermore, since the concept of sustainability is not uniquely defined, the same policies may or may not be sustainable at different times. The judgements will always be for specific circumstances.

In view of this, the only enforcement mechanism the Commission could rely on to enforce its judgements and prescriptions would be its ability to generate political pressures through public opinion and by shaping market reactions. To facilitate this, the Commission should have the right to make its judgements and recommendations fully public in a timely manner. It should have the right to make differentiated judgements on the fiscal situation

depending on circumstances, pointing to risks and problems as it sees fit. It should also have the right to educate public opinion through public statements about the importance, interpretation and implementation of policies that are sustainable. And it should be allowed to talk to the Scottish and UK Parliaments. But ultimately, recommending cuts in the block grant would be the most powerful instrument for raising public awareness.

Enforcement in this way can only work if the public regards the Commission as an authority on this matter. Moreover, the need to rely on public opinion creates a strong incentive for the Commission to exert the best possible judgement, make its decisions transparent and use its public role most carefully. A Council making unreasonable proposals or posing unreasonable demands would soon lose credibility in the public's eyes, as would a Council that based its judgements on shaky analysis and questionable assumptions. Thus, the limitation of the enforcement power would at the same time be the best guarantee for a high-quality performance from the Commission.

An important criticism of this approach is that public announcements, by shaping expectations in financial markets, can precipitate a fiscal crisis in situations where a crisis might have been avoided. Multiple equilibria can arise in debt markets when debtors will hold the debt of a government if they remain convinced that future policy adjustments will restore solvency, but sell that debt when they expect that such adjustments will not take place. In such situations, the Commission's public announcements that the sustainability of the country's debt is in doubt could shift market expectations from the first to the second case and result in massive sales. In view of this possibility, one might think that the Commission should not be allowed to make public announcements which refer to the possibility of fiscal crises in order to avoid such self-fulfilling expectations.

In fact the best way to avoid that danger is to give the government a clear debt target, plus a zone where deviations can be tolerated up to a critical boundary. After that, zero tolerance. Debt ratios, being a stock not a flow, are a reasonably slow moving variable. It would be easy to build conditionality into the Commission's judgements and recommendations. Favourable judgements and mild policy changes will be recommended, with the offer of extra financing help and no cuts in the grant, if the government is seen to be taking steps to reduce the debt burden towards target well before the upper boundary is reached. But once the boundary is breached major adjustments will be demanded and veto warnings issued. At the same time, the government should have an opportunity to prepare a response in reasonable time and not be taken by surprise by the Commission's announcements. This could be achieved by requiring the Commission to forward its assessment of a potential crisis to the government before it is made public.

Independence, accountability and transparency

To fulfil its role properly and make unbiased judgements, the Commission would have to enjoy full political independence of the Scottish government and from the UK government and its

institutions. Like independence at the European Central Bank, the Commission's independence should be determined by five statutory rules:-

First, that the Commission does not and may not take directives from any national or regional government, or from any institutions controlled by those governments.

Second, that the Commission has the right to develop its own framework of analysis and its own operating definition of sustainability.

Third, the resources available to the Commission: This rule should fix the Commission's budget for a medium-term horizon of, say, five years, and should be amendable only by a majority of votes in the Scottish Parliament. Such a rule would shield the Commission from any attempt by politicians to make it ineffective by draining its resources. The remuneration of Commission's members should be determined by the Commission's statutes and linked to the salaries of comparable public sector offices. The Scottish and UK governments should be required to give the Commission full and timely access to all information requested.

Fourth, members of the Commission should be personally independent from political pressures. Personal independence could be assured by giving members fixed-term, non-renewable appointments. Their appointments should be long enough to allow them to acquire the necessary expertise and standing in the public debate. Appointments should be staggered to assure that the Commission's membership does not change in its entirety at the end of a given year, thus assuring continuity in its views and judgements. It should be impossible to dismiss Commission member except in cases of unethical or unprofessional behaviour. This will ensure that they cannot be threatened or removed if they make decisions which are unpopular with the government. Members leaving the Commission after the expiration of their term should be restricted from political office for four years to ensure that they have no incentive to grant favours that might improve their post-Commission career prospects.

Fifth, the Commission's freedom from political pressure should be balanced by an appropriate mechanism of accountability to assure its effectiveness and democratic legitimacy. For this purpose, the Commission should report to the Scottish Parliament regularly. The Scottish Parliament should have the right to call the chairperson in for public hearings, and it should have the right to dismiss the Commission *in toto*. This last provision, however, should be limited by two specifications. First, that the Commission may be dismissed only by sufficient majority (say 67%) of the Scottish Parliament, and, second, that the last assessment of the Commission would not be out of effect when the Council is dismissed. In this way, Parliament would be kept from abusing its power for the sake of short-sighted political gains, and would dismiss the Commission only in cases where a broad majority felt that it had not performed properly. Given the publicity that such an action would have, the Parliament would do that only in cases of severe misperformance.

The independence of the Commission also demands a high degree of transparency in its operations. Limited transparency would only reduce the effectiveness of its public announcements, as the public might doubt the Commission's competence and impartiality. This calls for

the publication of all materials relevant to the Council's judgements and decisions, including a clear exposition of the criteria used for the assessment, as well as the minutes of Commission meetings. There is no need to publish these materials immediately after a meeting or decision. Such a requirement might affect the Commission's ability to obtain and process all relevant information. Instead, the Commission could choose a publication lag of several months, within which all relevant information is published.

Composition and appointment procedure

One can easily understand that, in contrast to the optimality of fiscal policy choices which is a matter involving preferences over the level and composition of public spending and taxation, sustainability is a technical constraint on public finances. This implies that the Commission's task is essentially technical, even if the Commission's judgements would play an important role in the political process. Given the technical nature of its mandate, members of the Commission should have sufficient economics expertise and experience with the management of public finances. In some cases, academics with the necessary expertise would be regarded as appropriate members of the Commission; while in others the public might prefer individuals with careers in international institutions such as the IMF, ECB or the financial markets. Since the mandate is a technical rather than political one, the question of representing different sectors of the economy does not arise. This means that the Commission could be limited to say three to five members. Candidates should be proposed to the Scottish Parliament by the finance committee after hearings and after the committee has received an opinion from the government.

The Commission: an agenda setter?

Instead of being a referee of budgetary plans, the Commission could become an agenda setter in this process, spelling out annual limits for the increase in a member state's general government debt at the beginning of the budgeting process. The national governments would then be obliged to observe these limits, though of course, they would be free to choose an increase in government debt smaller than the limit set by the Commission.

The role of an agenda setter would increase the public visibility of the Commission, but also the intensity of its involvement with Scotland's public finances. The Commission would also have to evaluate the government's priorities and goals, the country's economic and fiscal situation and prospects every year. This could become a very large task, duplicating existing government departments, demanding substantial resources for analysis and a lot of time for hearings and consultations. More importantly, it would almost certainly bring the Commission into conflict with Parliament and the elected government who have democratic legitimacy, whereas the Commission would not.

Making the Commission an agenda setter in the national budget processes would also shift the burden of proof regarding sustainability from the government to the Commission. If the Commission is to set annual limits for the change in government debt, the government and public will assume that the economy will meet its sustainability requirements as long as they observe

the annual limits set by the Commission. The government itself would not have to worry about sustainability any more, and would simply rely on the judgement of the Commission instead. The Commission would then find it hard to demand fiscal adjustments from the government, if that government had observed the limits set by the Commission even if it turned out that, due to new information, the Commission had had to change its view of the situation. Thus the Commission would inevitably assume responsibility for sustainability and a good part of fiscal policy in the eyes of the public – raising questions of legitimacy and the function of parliament again.

The Commission: a veto player?

By contrast, the responsibility for ensuring sustainability, and the choice of fiscal policies, would remain firmly with the government if the Commission were cast as a veto player. The burden of proof would remain with the government who would have to convince the Commission that their fiscal plans were sustainable given the current economic situation and the outlook for the future. This would force the government to argue openly about sustainability and signal that sustainability is their responsibility. Since the government retains full control over all fiscal policy instruments and, therefore, control over the adjustments to be made when sustainability is at risk, it is clear that being a veto player is a more appropriate role for the Commission.

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