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Scotland's Fiscal Framework: Assessing the Agreement

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Preface

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Executive Summary

The Smith Commission Agreement, published on 27 November 2014, set out proposals for the devolution of new tax and welfare powers to the Scottish Parliament which will soon be enshrined in law when the Scotland Bill 2015–16 receives Royal Assent.

These new revenue and spending responsibilities mean that the block grant the Scottish Government receives from the UK government will have to be adjusted. The Smith Commission recognised this but did not set out in detail how these block grant adjustments (BGAs) should be made. It did, however, provide a number of principles that it felt the BGAs and other parts of Scotland's new "Fiscal Framework" should satisfy.

Unfortunately, these principles turn out to be mutually incompatible: no single method of calculating the BGAs can satisfy all of the principles. Different methods can also lead to big differences in the size of the BGAs – and hence in the amount of 'adjusted' block grant the Scottish Government receives from the UK government – after just a few years. It is therefore perhaps unsurprising that agreeing how the BGAs will be calculated was the trickiest issue in the negotiation of the Fiscal Framework.

After many months of negotiations, the UK and Scottish governments finally published the Fiscal Framework Agreement in February 2016. This report appraises that agreement, focusing on the issue of the BGAs. This is central to understanding the potential impact of the new fiscal responsibilities on the Scottish Government's budget and the additional fiscal incentives and risks Scotland will soon face.

Policy background

- The Scottish Government has traditionally relied on a block grant from the UK government to finance most of its spending. The *change* in this block grant each year is determined by the Barnett Formula, which allocates to the Scottish Government a population share of changes in 'comparable spending' in England.
- The Scotland Act 2012 transferred stamp duty land tax, landfill tax and some powers over income tax to the Scottish Government. The recommendations of the Smith Commission, now being enshrined in law in the Scotland Bill 2015–16, go significantly further. On the tax side this includes devolving significant new powers over, and almost all the revenue from, income tax, and assigning half of VAT revenues raised in Scotland. In relation to welfare spending, it includes fully devolving a number of social security benefits, mostly related to disability. The aim is to give the Scottish Government new policy levers and more control over its budget, and greater financial incentives to boost economic and revenue growth and reduce welfare spending needs.
- The Smith Commission also committed to retaining the Barnett Formula as the mechanism for determining Scotland's underlying block grant once these new powers are devolved. But it recognised that Scotland's Barnett-determined block grant would need to be adjusted to reflect both the new tax-raising powers and new expenditure responsibilities.

Block grant adjustments and 'no detriment from the decision to devolve'

- The Commission did not define how these BGAs should be calculated and indexed over time. Instead it set out a number of principles that it felt the BGAs (and the wider new "Fiscal Framework" that Scotland requires) should satisfy.
- The first 'no detriment' principles states that neither government should lose out solely as a result of the 'initial decision to devolve' a tax or welfare power. This has obvious implications for the calculation of the initial BGAs for when a power is *first* devolved. The initial reduction in the block grant for a devolved tax should be equal to the amount of tax revenues being devolved. Similarly, the initial BGA for welfare should be equal to the amount of spending being devolved.
- The Commission did not state whether this principle should apply in subsequent years. The Scottish Government, however, believes it should. In particular, it has stated that it believes this principle means that, if Scotland's devolved revenues and welfare spending change at the same *percentage rate per capita* as those in the rest of the UK (rUK), then Scotland's funding should be no higher or lower than it would have been *had the powers not been devolved*.
- The Scottish Government therefore advocated updating the initial BGAs based on the percentage change in comparable revenues or welfare spending per capita in rUK, and the rate of population growth in Scotland. This Indexed Per Capita (IPC) approach would mean that if Scotland's devolved revenues and welfare spending per capita grew at the same rate as those in rUK, Scotland's budget (block grant *plus* devolved tax revenues *less* devolved welfare spending) would be the same as if this tax and welfare devolution had not occurred. This satisfies the Scottish Government's interpretation of 'no detriment' and would insulate its budget from population-based revenue and welfare spending risk. Under such a formula, the Scottish Government would gain if its tax revenues per capita grew at a faster rate than those in rUK, and lose if they grew more slowly.

Block grant adjustments and the 'taxpayer fairness' principle

- The second 'no detriment' principle set out by the Smith Commission was that, after the powers were devolved, neither government should lose or gain financially from policy decisions of the other government. This suggests that policy changes to taxes in rUK which are devolved to Scotland should not affect overall public spending in Scotland.
- Unfortunately, it turns out that this 'taxpayer fairness' principle is incompatible with the principle that there should be 'no detriment from the decision to devolve', and hence with the Scottish Government's preferred IPC approach to indexing the BGAs.
- The UK Government initially proposed a method for indexing the BGAs that satisfies the 'taxpayer fairness' principle: the Levels Deduction (LD) approach. This method would increase the BGA each year according to Scotland's population-based share of any changes in equivalent revenues or welfare spending in rUK.
- This is similar to the operation of the Barnett Formula, which changes Scotland's block grant by its population share of any changes to comparable spending in rUK. Thus the LD approach means that, when increases in revenues in rUK are spent on comparable services, the population-share based increase in the BGA exactly offsets the population-share based

increase in the underlying Barnett-determined block grant. Changes in rUK tax revenues would, therefore, not feed through into changes in public spending in Scotland. The LD method thus satisfies the 'taxpayer fairness' principle.

- However, the LD approach does not satisfy the Scottish Government's interpretation of the principle that there should be 'no detriment from the decision to devolve'. Key to this is the fact that Scotland's income tax revenues per head are around 12 per cent lower than those in the UK as a whole. This means that its per capita revenues would have to grow at a faster rate to match increases in the BGA which in turn would effectively be derived from increases in revenues per capita in rUK. If its revenues instead grew at only the same rate per capita as in rUK, Scotland's budget would be lower than if taxes were not devolved.

An attempt at compromise

- In an effort to reach an agreement, the UK government proposed a compromise: the Comparable Model (CM) approach. Under this, the change in the BGA is determined by a *tax-capacity adjusted population share of the change in rUK revenues*. In other words, it accounts for the fact that Scottish revenues per capita from the taxes to be devolved are lower than those in rUK and does not penalise Scotland for that.
- This addressed one of the Scottish Government's concerns. But the Scottish Government objects to the CM approach because it does not account for Scotland's relatively slower population growth.
- To see the issues this may cause, suppose that revenues in rUK are growing but only due to population growth (i.e. revenues per capita are constant). The CM approach would still increase Scotland's BGA. If Scotland's population and revenues were unchanged (and its revenues per capita also constant), this would lead to a fall in the Scottish Government's budget relative to what would happened if taxes were not devolved.
- The UK Government argued that taking into account Scotland's lower population growth would be inconsistent with how block grant funding is allocated to Scotland – the Barnett formula does not take account of Scotland's lower population growth – and thus unfair to rUK. It therefore seemed that negotiations were at an impasse and there were concerns that a Fiscal Framework would not be agreed before the 2016 Holyrood elections.

What was eventually agreed in the Fiscal Framework Agreement?

- In the end, the Fiscal Framework was agreed on the day of the deadline set by the Scottish Parliament's Devolution (Further Powers) committee.
- The Agreement, published on February 25th confirms that the initial BGAs will be set equal to the amounts of revenues and welfare spending being devolved to the Scottish Government.
- It also states that, for a transitional period until 2021–22, the governments have agreed that the BGAs would be indexed "using the 'Comparable Model' (CM), whilst achieving the outcome delivered by the Indexed Per Capita (IPC) model."
- This may be sound like a compromise but it is not. Making an initial adjustment by the CM approach but then reconciling it with what would have happened under the IPC approach is ultimately no different from using the IPC approach all along. In effect the Scottish Government has got its preferred approach, at least for the first five years of devolution. This

protects Scotland from revenue risks associated with its slower population growth and satisfies the Scottish Government's interpretation of the principle that there should be 'no detriment from the decision to devolve'.

- In agreeing to this, the UK government has effectively conceded its objections to the IPC approach – that it does not satisfy the 'taxpayer fairness' principle, and that it treats population growth in a way inconsistent with the Barnett formula.
- It is also worth noting that it is not only the UK government that could suffer from the resulting violations of the 'taxpayer fairness' principle. In particular, the use of the IPC approach could see the Scottish Government's budget fall if there are income tax cuts in rUK (although it could gain if there were income tax increases).
- The method for indexing the BGAs after 2021–22 will be negotiated after the 2021 Scottish Parliamentary elections. Given the difficulty of reaching an agreement this time round, and the principles at stake, these negotiations may not go smoothly.

How might Scotland's budget evolve under the agreed Fiscal Framework?

- How much difference could tax and welfare devolution make to the level of resources available to the Scottish Government? To consider this we examine a number of indicative scenarios – drawing on historic revenue and spending outturns and future projections of revenue, spending and population growth.
- This analysis confirms that if devolved revenues and welfare spending per capita grow at the same rate in Scotland as in rUK, use of the IPC approach means that the amount available to the Scottish Government will be the same as if there were no tax and welfare devolution.
- Faster or slower growth in devolved revenues or welfare spending per person could have notable effects on the Scottish Government's budget if sustained. Illustrative scenarios – based on historic differences in income tax revenue and welfare spending growth – show impacts on the Scottish budget of over £500 million a year after five years and over £2 billion a year after 15 years.
- We also examine how different Scotland's funding will be using the IPC approach for indexing the BGAs compared to other indexation approaches. The slower population growth projected for Scotland than rUK means that Scotland's funding would have been around £300 million a year lower in real-terms after five years under the CM approach than under the IPC approach. The gap increases to over £1 billion for the LD approach.

Budgetary risk and borrowing

- Devolution of tax and welfare also means exposing the Scottish Government's budget to additional risks. The method agreed for adjusting the block grant largely insulates Scotland from the impact of revenue or welfare spending shocks that hit the whole of the UK – such as the global financial crisis and associated recession. This is because, when rUK revenues fall, for instance, the BGA – i.e. the bit taken off the block grant – also falls.
- However, the Scottish Government will face all the risk associated with economic trends or shocks to devolved revenues or welfare spending that affect Scotland only, or affect Scotland to a greater extent than rUK. It is for this reason that Scotland needs increased borrowing powers.

- The Scottish Government got less in the way of additional borrowing power than it hoped for. Capital borrowing powers were barely increased.
- Recent experience suggests that the current borrowing limits and reserves limits agreed should be large enough to smooth devolved revenues, but some issues could still arise. First, Scotland will only be able to borrow to make up for a *forecast* shortfall in revenues – when Scottish GDP growth is below 1% and at least 1 percentage point less than UK GDP growth. This could be constraining since the correlation between devolved revenues and Scottish GDP is far from perfect and Scotland's revenues may be temporarily relatively depressed even if these conditions do not hold. Second, the limits are currently fixed but there is a case for increasing them in line with the growth in devolved revenues and spending (i.e. the amounts of cash at risk) and for reviewing arrangements, in case the correlation between Scottish and UK economic cycles weakens in the years following devolution.

Compensation for spillover effects

- The Smith Commission Agreement suggested compensating transfers should be paid whenever the decisions of one government affect the revenues or spending of the other.
- There could potentially be a wide range of spillover effects for any given policy change. For example, an increase in Scottish income tax rates might increase eligibility for Universal Credit (because eligibility is based on after-tax income), which is paid for by the UK government. But it might also induce behavioural effects: some Scottish taxpayers might work less, reducing the amount the UK government raises in National Insurance Contributions in Scotland; others might, if able to, convert earned income to dividend income which would continue to be taxed at a rate set by the UK government, acting to increase rUK revenues.
- The Fiscal Framework Agreement states that the 'direct' spillover effects – i.e. those that come about mechanically as a result of a policy change – will be subject to compensatory transfers. The impact of an increase in Scottish income tax rates on eligibility for Universal Credit would count as a direct effect and the Scottish Government would be obliged to pay a compensating transfer to the UK to account for this.
- The Fiscal Framework Agreement states that financial spillover effects resulting from behavioural change and any indirect or second round effects will not (in general) be subject to compensatory transfers. Given the difficulty in calculating the magnitude of behavioural effects, this decision appears pragmatic.
- However, the Fiscal Framework Agreement states that in exceptional circumstances behavioural effects that involve a 'material and demonstrable' cost or saving to the other government could be taken into account and be subject to compensatory transfers, if both governments agree to it.
- But it provides no indication about what level of financial spillover effect might be considered 'material', so this could open the door to dispute between the Scottish and UK governments. Furthermore, in many cases, those policies that may generate the biggest behavioural effects will also be those where the precise magnitude of the behavioural effect is most uncertain – and therefore subject to the most potential for disagreement.

The Fiscal Framework in an international perspective

- Scotland's block grant will continue to be calculated by the Barnett Formula, which takes no account of spending need. This is not in itself particularly unusual: many countries, particularly those where the sub-central governments (SCGs) have substantial policy autonomy, have decided that the process of allocating grant according to spending need is too difficult politically. But what is unusual about the Barnett Formula is the way in which it allocates a largely arbitrary grant to Scotland, based on historic accident, and allocating higher grant-per-person when Scotland's population grows less quickly than England's (as it has done for many years and is expected to continue doing).
- Most decentralised countries do take into account the ability of SCGs to raise revenue from devolved taxes. SCGs that have lower tax capacity (e.g. due to lower incomes) often receive equalisation grants to top up their revenues at least to some extent, while in some cases SCGs that raise more in tax than average see part of their excess revenue equalised away to fund these grants.
- Because –at the point of devolution – Scotland's BGA will be determined by the actual revenues raised from the taxes to be devolved, there is effectively full equalisation of Scotland's lower tax capacity at the point of devolution. Indeed, this is the principle of 'no detriment from devolution' established by the Smith Commission.
- In future years however, changes in relative tax capacity for those devolved taxes are in principle fully borne by the Scottish Government. Whilst the Scottish Government will capture all of the gains of per capita tax revenue growth that are in excess of rUK revenue growth, the Scottish budget has no protection against the risk that its revenues per capita grow more slowly than those of rUK.
- This system of full revenue equalisation at the point of devolution and no equalisation thereafter is unusual.
- The proposed BGAs will protect the Scottish budget from macro-economic shocks that hit the whole of the UK equally. This is probably the key strength of Scotland's block grant adjustment and is in contrast to what happens in many countries – in many countries, SCGs tend to be more exposed to the risk of common macro-economic shocks.

1. Introduction

The Smith Commission Agreement, published on 27 November 2014[1], set out proposals for substantial fiscal devolution to the Scottish Parliament. The Scotland Bill – due to receive Royal Assent shortly – will enshrine these powers in law.

Both the Smith Commission Agreement and the UK Government's subsequent Command Paper, 'An Enduring Settlement'[2] recognised that the devolution of fiscal powers has to be accompanied by the development of a new Fiscal Framework for Scotland.

Without such a framework there could be no fiscal devolution. It is essential in order to set out rules such as: how the Scottish Government's block grant will be calculated in light of its new fiscal powers; what level of borrowing powers Scotland will have to enable it to deal with the additional economic risks and revenue volatility that it will face; the extent and scope of fiscal rules governing Scottish Government deficits and debt; arrangements for independent fiscal scrutiny, including fiscal forecasting; and arrangements for governing the increasingly complex interactions between Scottish and UK fiscal policy, including dispute resolution.

The Fiscal Framework is not part of the Scotland Bill: it is instead an agreement between the UK and Scottish governments (and therefore does not have the same legal standing as the Bill). It was finally published on 25 February 2016 after many months of negotiations between the two governments.[3] The process of reaching agreement was protracted, and there were a number of contentious areas. But it seems the most significant area of disagreement was how the Scottish Government's block grant should be adjusted to reflect its new powers.

The Smith Commission Agreement established that Scotland's underlying block grant funding would continue to be determined by the Barnett Formula. But the Barnett-determined block grant would then have to be adjusted to reflect the new powers. On the one hand, the grant would have to be reduced to reflect the transfer of tax revenues from the UK to the Scottish Government, while on the other, an addition would need to be made to reflect the transfer of new welfare spending responsibilities to the Scottish Government.

The Smith Commission Agreement also established a number of high-level principles which it felt the Fiscal Framework should adhere to, and which were expected to govern the development of a proposal to adjust Scotland's block grant. But, as we showed in our previous report, it is not possible to design a method for adjusting Scotland's block grant that meets all of the Smith Commission principles simultaneously.[4]

This inconsistency between the Smith principles was the main cause of the protracted negotiations between the two governments, and for several months it seemed likely to undermine the progress of the Scotland Bill. Each government interpreted the principles somewhat differently and chose to

[1] The Smith Commission Agreement, November 2014 https://www.smith-commission.scot/
[2] Scotland in the United Kingdom: an enduring settlement, January 2015 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/397079/Scotland_Enduring Settlement_acc.pdf
[3] https://www.gov.uk/government/publications/the-agreement-between-the-scottish-government-and-the-united-kingdom-government-on-the-scottish-governments-fiscal-framework
[4] D. Bell, D. Eiser and D. Phillips (2015), 'Adjusting Scotland's Block Grant for new Tax and Welfare Powers: Assessing the Options', IFS Publication, available at: http://www.ifs.org.uk/publications/8060.

prioritise them differently, with the result that each favoured an alternative approach to adjusting Scotland's block grant. Compromise was finally reached in February 2016, with an agreement on how to adjust the block grant for the next five years. While the mechanism chosen is complex and seems to blend elements of the UK and Scottish governments' preferred approaches, ultimately it is the Scottish government's approach that will determine the block grant available to Scotland during this period. After five years, an independent assessment will be carried out and negotiations will take place on how to adjust the block grant in the years beyond 2022.

This report reviews and appraises the Fiscal Framework Agreement, with a particular focus on this issue of block grant adjustment. It proceeds as follows.

In Section 2 we briefly set out Scotland's existing fiscal architecture, the tax and welfare powers being devolved to Scotland, and the need for a block grant adjustment. We also discuss the principles that the Smith Commission said the new Fiscal Framework should adhere to. In Section 3 we describe and analyse the Fiscal Framework, in particular focusing on the section relating to the block grant adjustments. In doing this we consider the extent to which the chosen method for updating these adjustments over time meets the various Smith Commission principles, and in particular the 'taxpayer fairness' principle and the 'no detriment' principle. We also compare the Agreement to the initial proposals of each government.

In Section 4 we examine a number of scenarios of how the Scottish Government's income from the block grant and devolved taxes may evolve in the years ahead under the chosen adjustment mechanism. This section also compares outcomes under the agreed approach to adjusting the block grant with: the situation without tax and welfare devolution; the Scotland Act 2012 devolution provisions; and the UK government's preferred approach to adjusting the block grant.

Section 5 looks at issues related to uncertainty and risk. The future path of Scottish and UK revenues and spending is not known with certainty: forecasts will need to be made and are key to the operation of Scotland's new Fiscal Framework. Revenues and welfare spending are also likely to be volatile and it is important to consider whether the new borrowing powers Scotland will have are likely to prove sufficient to manage that risk.

In Section 6 we discuss the implications of the chosen block grant adjustment for when tax or welfare policies are changed in Westminster or Holyrood. The Smith Commission said that such policy changes by one government should cause 'no detriment' to the other and we re-iterate the difficulties of delivering this.

In Section 7 we briefly compare Scotland's new fiscal framework – and in particular the approach it takes to equalisation, and revenue and spending risks affecting both Scotland only and the UK as a whole – with those in a number of other countries.

Section 8 offers some concluding thoughts.

Unfortunately we cannot cover every aspect of the Fiscal Framework Agreement. In particular, the report does not consider the arrangements for inter-governmental relations set out in the Agreement. However the experience of negotiating the Framework, and the extent to which tax, spending and fiscal policy will remain intertwined in the UK, suggests relationships could sometimes be fraught. And of course, in not much more than five years time we may need to go through another protracted round of negotiations on the block grant adjustment mechanism to be used in 2022 and beyond.

2. Barnett, Smith, and Block Grant Adjustment

Currently, the vast majority of taxes – including income tax, National Insurance, VAT and corporation tax, among others – are paid by people all over the United Kingdom to the UK government. On the other hand, responsibility for government spending in and on behalf of Scotland, Wales and Northern Ireland is split between the UK government and the devolved governments and local authorities in each of these countries.

Because they raise relatively little revenue directly themselves, the devolved governments rely on transfers – or 'block grants' – from the UK Treasury to fund this spending. On top of this, devolved governments have some relatively small revenues of their own: in Scotland's case non-domestic rates (NDR), and since April 2015, revenue from the devolved versions of Stamp Duty Land Tax and Landfill Tax which were devolved under the Scotland Act, 2012.[5] Under this Act, revenues from 10-percentage points of income tax levied on non-savings and non-dividends income, and powers to vary all rates of income tax up or down together (in 'lock-step') are also to be devolved to Scotland this April. But even after this, the Scottish Government's taxes would raise an amount equal to around one-fifth of devolved spending (or one-sixth of overall revenues in Scotland), with most of the rest continuing to be funded by the block grant from Westminster.[6]

How these block grants *change* from year to year is determined largely by the Barnett formula.[7] Each year the block grant is increased or decreased by allocating Scotland a population-based share of the cash-terms change in comparable spending – that is, spending for which responsibility is devolved – in England. Given that the amount of block grant available per person in Scotland is greater than comparable spending per person in England, these population-share based increases in the block grant are smaller in percentage terms than the equivalent increase in comparable spending in England. This 'Barnett squeeze' (explained in more detail in Appendix 1) tends to lead public spending per person in Scotland to converge towards the (currently lower) level in England.

The traditional centralisation of most tax powers at the level of the UK government and the funding of Scotland through Barnett-determined block grants has two further implications. First, and most obviously, it has meant relatively limited scope for the Scottish Government to change tax (or welfare) policy, or to tax more and spend more or tax less and spend less. Second it has meant that the Scottish Government has largely been insulated from changes in both the relative and absolute levels of tax revenues in Scotland. This has provided a greater degree of certainty and stability in funding, but has meant less of a financial incentive to implement policies that boost the economy and grow the tax base, and relatively weak fiscal accountability for policy decisions.

Recent years have seen increasing demands to reform the system. As already mentioned, some tax powers and revenues were devolved in the Scotland Act 2012.But it was after Scotland voted "No" in the independence referendum that the most substantial changes to its fiscal powers and framework were proposed. In particular, the Smith Commission was set up to reach agreement

[5] Land and Buildings Transactions Tax, and Scottish Landfill Tax, respectively.
[6] *Government Expenditure and Revenues Scotland 2013-14*, http://www.gov.scot/Publications/2015/03/1422/5.
[7] Our earlier work has discussed the operation and effects of the Barnett Formula in some detail. In particular see Section 2 of: D. Bell, D. Eiser and D. Phillips (2015), 'Adjusting Scotland's Block Grant for new Tax and Welfare Powers: Assessing the Options', IFS Publication, available at: http://www.ifs.org.uk/publications/8060.

between the five parties represented in the Scottish Parliament on a new devolution settlement for Scotland, including a package of additional tax and welfare powers.[8] It reported in November 2014 and its recommendations have been legislated for in the Scotland Bill 2015-16 – which is very soon to receive Royal Assent.

On the tax side, the most significant change is the devolution of income tax rates and bands on non-savings and non-dividend income, and all associated revenues. The next biggest source of revenue will be the half of VAT revenues raised in Scotland that are to be assigned to the Scottish Government (assignment means the Scottish Government gets the revenue from a tax but does not have the power to vary the tax rate). Table 2.1 summarises the tax revenues to be devolved or assigned to Scotland.

Table 2.1: Revenues devolved to the Scottish Government or Scottish local authorities (£s millions, 2013-14 values)

	Historic Situation	Scotland Act 2012	Smith Commission Package
Non-domestic Rates	1,927	1,927	1,927
Council Tax	1,941	1,941	1,941
Income Tax		4,258	10,911
Stamp Duties (Land and Buildings)		385	385
Air Passenger Duty			251
Landfill Tax		105	105
Aggregates Levy			50
Assigned VAT		0	5,030
Total devolved revenues	3,868	8,617	15,571
Total devolved and assigned revenues	3,868	8,617	20,600
Devolved expenditure	40,813	40,813	43,334
Devolved revenue as % of estimated devolved expenditure	9%	21%	36%
Devolved and Assigned revenue as % of estimated devolved expenditure	9%	21%	48%

Note: This table includes Scottish local authority spending and revenues (council tax) as ultimately these powers and revenues are subject to the control of the Scottish Government.
Source: Adapted from Government Expenditure and Revenue Scotland (Scottish Government, 2015)

On the welfare spending side, the Smith Commission proposed fully devolving a number of social security benefits, mostly related to disability, the combined value of which is around £2.5 billion a year. This would give the Scottish Government the power to reform their structure (and indeed create new benefits) and vary their generosity.[9]

The Smith Commission recognised that alongside these new revenue and spending responsibilities, Scotland would require a substantially revised fiscal framework. It also set out a list of principles that such a framework should conform to. One of these is that changes in Scotland's block grant from the Treasury should continue to be determined by the Barnett Formula. This means that the 'Barnett squeeze' discussed above – which leads spending per person in Scotland to converge towards English levels – will continue.

[8] The parties represented in the Smith Commission were the Scottish Conservatives, Scottish Greens, Scottish Labour Party, Scottish Liberal Democrats, and the Scottish National Party.
[9] The Scottish Government will also have a number of powers relating to the administration of Universal Credit and the ability to top up benefits in non-devolved (reserved) areas of welfare.

However, to reflect its new tax raising responsibilities, the Smith Commission Agreement (SCA) made clear that Scotland's Barnett-determined block grant would have to be adjusted to reflect the transfer of revenue from the UK to the Scottish Government, and to reflect its new welfare spending responsibilities.

Making the initial adjustment to Scotland's block grant is relatively straightforward, at least in principle. The SCA identified a principle that there should be 'no detriment as a result of the decision to devolve further power' (Box 2.1 sets out the Smith Commission's principles that relate most closely to the block grant adjustment). In other words, the baseline block grant adjustment (BGA) to be deducted to account for the devolution of tax is simply the revenue raised from that tax at that point.. Similarly, the baseline BGA for welfare is the actual expenditure on those benefits in Scotland by the UK government at the point of devolution. That way, the transfer of tax and welfare powers does not in itself add or subtract from the Scottish Government's overall 'spending power': so neither the UK nor Scottish government suffers 'detriment'.

Box 2.1. Smith Commission principles relevant to the block grant adjustment (BGA)

Barnett Formula: the block grant from the UK Government to Scotland will continue to be determined via the operation of the Barnett Formula.

Economic responsibility: the revised funding framework should result in the devolved Scottish budget benefiting in full from policy decisions by that Scottish Government that increase revenues or reduce expenditure, and the devolved Scottish budget bearing the full costs of policy decisions that reduce revenues or increase expenditure.

No detriment as a result of the decision to devolve further power: The Scottish and UK budgets should be no larger or smaller simply as a result of the initial transfer of tax and/or spending powers, before considering how these are used. This means that the initial devolution and assignment of tax receipts should be accompanied by a reduction in the block grant equivalent to the revenue foregone by the UK Government. If it is deemed to apply not only at the initial point of devolution but also in subsequent years, it also has implications for how the BGA should be indexed.

No detriment as a result of UK Government or Scottish Government policy decisions post-devolution:

- Where either the UK or Scottish Governments makes policy decisions that affect the tax receipts or expenditure of the other, the decision-making government will either reimburse the other if there is an additional cost, or receive a transfer from the other if there is a saving. (*The compensation principle*).
- Changes to taxes in the rest of the UK (rUK), for which responsibility in Scotland has been devolved, should only affect public spending in rUK. Changes to devolved taxes in Scotland should only affect public spending in Scotland. *(The 'taxpayer fairness' principle*).

Implementable and sustainable: once a revised funding framework has been agreed, its effective operation should not require frequent ongoing negotiation. However, the arrangements should be reviewed periodically to ensure that they continue to be seen as fair, transparent and effective.

UK economic shocks: the UK Government should continue to manage risks and economic shocks that affect the whole of the UK.

The main challenge is to determine how the block grant should be adjusted in future years. Clearly, one cannot simply reduce the block grant by the actual revenue raised from devolved taxes in Scotland in each future year – this would completely undermine the case for devolution, as the Scottish budget could neither gain nor lose from changes in tax rates or from differences in the economic performance between Scotland and the rest of the UK (rUK). Any changes in revenues would be exactly offset by changes in the BGA and hence in the block grant.

Instead, a method is required to index the value of the initial BGA for future years. If tax revenues in Scotland grow more quickly than this indexed BGA, then the Scottish budget will be higher than it would have been without the new tax powers. On the other hand, if revenues in Scotland grow more slowly than the BGA, then the Scottish budget will be smaller. Similarly, the Scottish budget will benefit if devolved welfare spending in Scotland increases less quickly than the BGA for welfare, and vice versa. Thus, the Scottish Government will have the financial incentive to boost its revenues and constrain welfare spending, and will face the financial consequences if it does not do so.

The SCA stated that 'future growth in the reduction to the block grant should be indexed appropriately'. But it did not make any specific recommendations as to how this indexation should take place.

How the block grant adjustment should be indexed has been perhaps the most contentious element of the development of Scotland's Fiscal Framework. Part of the reason why the issue has been contentious is that the SCA set out a number of different principles which the Fiscal Framework should adhere to which are of relevance (Box 2.1). Yet some of these principles are, as we showed in a previous report, seemingly mutually incompatible. There has in particular been disagreement between the two governments as to how the two 'no detriment' principles should be interpreted (no detriment from the decision to devolve, and no detriment from policy decisions post-devolution); and which should take precedence in the design of the BGA indexation method.

Eventually, after months of negotiation, an agreement was reached. The next section discusses this agreement, focusing specifically on how BGAs are to be calculated and indexed over time.

3. The Fiscal Framework Agreement and block grant adjustments

The agreement between the Scottish Government and the UK Government on the Scottish Government's fiscal framework (the 'Agreement') was published on 25 February 2016. To summarise, it:

- Sets out a provisional timeline for devolution of some of these responsibilities: income tax in 2017–18, air passenger duty in 2018–19 and VAT in 2019–20;
- States that the UK government will provide £200 million as a one-off payment to support the implementation of these new powers;
- Provides for an initial transfer of £66 million a year for ongoing administration costs, which will be updated year-to-year using the Barnett formula;
- Agrees that transfers between governments when a policy change by one affects the revenues or spending of the other should generally account for 'direct' effects only. 'Behavioural' effects will only be accounted for in exception circumstances if they are 'material' (i.e. substantial). No transfers will take place unless an agreement can be reached on the size of the transfer;
- Sets out an increased **capital** borrowing limit of £3.0 billion (compared to £2.2 billion presently), with annual borrowing for capital investment subject to a £450 million cap;
- Specifies an increased **resource** borrowing limit of £1.75 billion (compared to £0.5 billion presently), and a set of rules about the use of these powers;
- Allows the Scottish Government to pay into reserves up to a total of £0.7 billion, with annual drawdowns from these reserves limited to £0.25 billion for resource spending and £0.1 billion for capital spending;
- Provides for a statutory duty for the Scottish Fiscal Commission and Office for Budget Responsibility to cooperate;
- Mandates that the Scottish Fiscal Commission rather than the Scottish Government make the official forecasts for the devolved taxes and welfare benefits, and onshore GDP in Scotland;
- Describes the process by which disputes in relation to the Fiscal Framework will be resolved;
- Confirms changes in the Scottish Government's block grant will continue to be determined by the Barnett formula;
- Sets out the approach to adjusting the block grant to account for the revenues from newly devolved taxes, and spending on newly devolved welfare responsibilities.

The remainder of this section analyses the proposals set out in the Agreement for adjusting the Scottish Government's block grant. It considers the extent to which the chosen approach is likely to meet the Smith Commission principles; and how it compares to the preferred method of each government. Forecasting and borrowing are considered in Section 5. And Section 6 considers the issue of intergovernmental transfers to compensate for policy knock-on effects.

3.1 The initial baseline adjustment to the block grant

How will Scotland's block grant be adjusted to take account of its new fiscal powers? The Fiscal Framework Agreement specified that the initial deduction from Scotland's block grant for devolved taxes (other than for the already devolved Landfill Tax and Stamp Duty Land Tax) will be set equal to the UK Government's receipts from those taxes in Scotland *in the year immediately prior to the devolution of powers*. Similarly, the initial baseline *addition* to the block grant for devolved welfare will be set equal to the UK Government's spending on those benefits in Scotland *in the year immediately prior to the devolution of powers*.[10]

However, the revenue raised in Scotland in the year prior to devolution is clearly likely to differ from the revenue raised in the year in which devolution of tax occurs. There will therefore need to be a reconciliation between revenues in the year prior to devolution and those in the year in which devolution occurs. This reconciliation will be made by indexing the growth in Scottish revenues between the two years on the basis of the growth in equivalent rUK revenues. The indexation method used will be that identified in the Fiscal Framework Agreement, the properties of which are discussed in more detail in the subsequent sub-section.

The fact that the Block Grant Adjustments (BGAs) are indexed to the growth of rUK revenues from the year prior to devolution implies that the Scottish Government bears revenue risk from the very first year that devolution occurs. If Scottish revenues grow more slowly than rUK revenues between the year prior to devolution and the year of devolution itself, then Scotland's Block BGA in that first year will be greater than its revenues raised, and Scotland will have less funding than if the revenues were not devolved, and vice versa.

This approach is a little different from what we had anticipated in our earlier work. We had anticipated that the BGA in the first year of devolution would be determined by forecasts of the revenues the UK government would raise and the welfare spending it would incur in the first year of devolution. But basing it instead on the year *prior* to devolution may be pragmatic in the context of potential disagreement around forecast revenues.

The other advantage of basing the initial BGA on revenues and spending in the year *before* devolution relates to policy change. The Scottish Government may choose to vary tax (or welfare) policy in the first year that devolution occurs. If the BGA were calculated on the basis of revenues (or welfare spending) in the first year of devolution, but Scottish tax (welfare) policy had been varied in that year, then the calculation of the BGA would need to be based on the estimate of a counterfactual scenario – what revenues would have been raised in Scotland, had the UK Government's tax policy been in place? This counterfactual calculation would have been contentious. By basing the initial deduction instead on revenues in the year before devolution – and then assuming that revenue growth in Scotland keeps pace with rUK revenue growth by indexing the initial BGA – avoids the need to calculate counterfactual scenarios.

Another issue concerns what might happen should the year immediately prior to devolution of tax powers turn out to be an exceptional one in terms of Scotland's revenues relative to those of rUK. For example, if Scottish revenues were temporarily low as a result of a depressed offshore economy, but were to subsequently pick-up, then Scotland's BGA in that first year might

[10] The exception to this is in relation to Cold Weather Payment. Given the volatility of expenditure on the Cold Weather Payment, the initial baseline addition to the block grant will be an average of the UK Government's spending in Scotland from 2008/9 to the year prior to devolution.

retrospectively look too low. From this lower initial baseline, the Scottish budget would subsequently be more likely to be able to benefit from relatively faster future revenue growth. Conversely, if revenues were temporarily high, then the Scottish Government would be more likely to suffer from relatively slower future revenue growth.

This issue of 'exceptional years' could have been avoided by basing the initial BGA on an average of Scottish revenues over several years. One might argue that the averaging over a full business cycle would provide a settlement less subject to challenge by either party. Yet even this approach could cause problems if there was a longer run change in the relationship between revenues in Scotland and those in rUK.

Even though the initial BGAs are based on revenues and spending in the year before devolution, the initial BGA will have to be based in part on a forecast. Final data on revenue and spending outturns for the year prior to devolution will not be available at the time the initial BGA is set. However, outturn data on revenue and spending for at least part of the year should be available. In theory therefore, the short-term forecasts for revenues and spending throughout the remainder of the year should not be subject to wide error or dispute.

3.2 Indexing the Block Grant Adjustment: tax

Once the initial BGA has been set, it needs to be indexed over time. Paragraph 17 of the Agreement states that 'for a transitional period covering the next Scottish Parliament, the Governments have agreed that the BGA for tax should be effected by using the Comparable Model (Scotland's share), whilst achieving the outcome delivered by the Indexed Per Capita (IPC) method for tax and welfare'.

To understand what this means in practice, it is necessary to understand what is meant both by the Comparable Model (Scotland's share), and the Indexed Per Capita (IPC) method.

The Comparable Model and tax capacity

Under the Comparable Model, the change in Scotland's BGA is determined by a *tax-capacity adjusted population share of the change in rUK revenues*. This model is best understood by breaking it down into its component parts.

The *population share* is Scotland's share of the UK population. This share is already used as part of the Barnett formula to determine Scotland's block grant.

Tax capacity is the amount of tax raised per person by a given system of tax rates and thresholds. The Comparable Model takes account of Scotland's tax capacity relative to the rUK when indexing the BGA for tax over time. Scotland's revenues per capita *relative to the rest of the UK* for each of the taxes to be devolved are shown in Table 3.1. These figures are taken from the Fiscal Framework, where they are referred to as 'Comparability factors'. These factors determine the *tax capacity adjustment*.

Table 3.1. Comparability factors for tax in the Fiscal Framework

Tax	Comparability factor (%)
Income tax	87.5
SDLT	51.5
Landfill tax	108.3
VAT	98.9
APD	117.5
Aggregates	189.1

Note: The Comparability factors are in effect a measure of Scotland's relative tax capacity
Source: Scotland's Fiscal Framework

Under the Comparable Model, if rUK income tax revenues increase by £10 billion, and if Scotland's population share is 9%, and Scotland's tax capacity for income tax is 87.5% of rUK's, Scotland's BGA would increase by £787.5m (£10bn x 9% x 87.5%).

The Comparable Model was proposed by the UK Government on 12th February 2016 in an attempt to find a compromise on the Fiscal Framework, after several months of apparent stalemate.[11] The UK Government had previously argued that Scotland's BGA should be indexed by the Levels Deduction (LD) method. The LD method adjusts Scotland's block grant purely on the basis of Scotland's population share of the change in rUK tax revenues, but takes no account of tax capacity. Going back to the previous example, Scotland's block grant would increase by £900 million under the LD method (i.e. its 9% population share of the £10bn increase in rUK tax revenues), rather than £787.5m under the Comparable Model.

The UK Government had argued for the LD approach on the grounds that a devolved tax should no longer be subject to 'pooling and sharing' across the UK. The LD approach, by calculating the change in Scotland's BGA as a population share of a cash terms change in rUK revenue, is symmetric with the Barnett Formula (which calculates the change to Scotland's block grant as a population share of the cash terms change in comparable rUK spending). Thus the justification for LD is that all future growth in revenues in rUK from taxes that have been devolved to Scotland would remain in rUK.

The UK government argued that this feature of the BGA was necessary to satisfy the Smith Commission's 'taxpayer fairness' principle[12] But neither the IPD or Comparable Methods have this feature (Box 3.1 explains why).

There is however another important feature of the LD method. Scotland tends to have a lower tax capacity than rUK for the taxes that are being devolved (i.e. Scotland raises less per capita than rUK). This means that the use of the LD method to calculate Scotland's BGA would mean that Scotland's tax revenues per capita would have to grow at a faster rate than those in rUK, for the Scottish budget to keep pace with what it would have been without tax devolution (Box 3.1 explains why using a hypothetical example).

[11] See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/500284/CST_response_SAC.pdf
[12] See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/500284/CST_response_SAC.pdf

Box 3.1: Illustrating income tax revenue redistribution

In the first year that taxes are devolved, assume the population of rUK is 50, and the population of Scotland is 5, and that tax revenue per head (also known as tax capacity) is £100 in rUK and £90 in Scotland. Total tax revenue in Scotland is thus £450 (£90 x 5) and this is the amount deducted from Scotland's block grant, leaving the Scottish budget unchanged (and satisfying the "no detriment from devolution" principle).

Tax revenues in rUK are £5,000 (£100 * 50), and for simplicity, assume that this is also the amount spent on comparable (i.e. 'devolved') functions in rUK.

In the second period, suppose that income tax and 'comparable spending' in rUK increase by 20%, driven entirely by growth in revenues per capita (i.e. population is unchanged). This is equivalent to £1,000 growth in cash terms. The Barnett Formula would provide Scotland with a population share (10%) of the rise in comparable spending: £100.

Under the IPC method, Scotland's BGA would increase by 20% (the percentage growth in rUK revenues per capita). Assuming Scotland's population is also unchanged, Scotland's BGA would increase by £90 (£450*20%) in the second period.

So the Barnett Formula has increased Scotland's block grant by £100 and the BGA has reduced it by £90. Scotland's budget has increased by £10, because part of the increased rUK tax revenues have been in effect been allocated to Scotland via the interaction of the Barnett formula and IPC indexation. This would happen irrespective of whether the growth in rUK revenues was the result of a growth of taxable income or an increase in rUK tax rates.

If the Levels Deduction approach were used, then there would be no redistribution of the increase in rUK revenues to Scotland. Under Levels Deduction, Scotland's BGA would increase by its population share of the rUK tax increase. rUK tax has increased by £1000; Scotland's population share of this is £100. So the £100 increase in Scotland's BGA exactly cancels out the £100 increase in Scotland's Barnett-determined block grant.

What would happen under the Comparable Model? The Comparable Model takes account of Scotland's lower tax capacity. So rather than Scotland's BGA increasing by a population share of £1000, it would increase by 90% of its population share of the rUK tax increase, which in this case is £90.

Thus by taking account of Scotland's lower tax capacity, both the IPC and Comparable Methods result in some proportion of the future rise in rUK income tax revenues being redistributed to Scotland.

Note however an important feature of the LD method. rUK revenues have increased by 20%. Under both the IPC and Comparable Methods, Scotland's BGA has also increased by 20% (£90/£450); i.e. the implicit expectation is that Scotland's revenues increase at the same rate as those in rUK. But under the LD method, Scotland's BGA has increased by 22% (£100/£450).

(Note that if rUK revenues and spending *fell* in nominal terms (which can happen during recessions, but is unlikely in the long-run), then the IPC method and Comparable Method would redistribute *from* Scotland *to* rUK. To see this, assume reductions rather than increases in the figures above.)

The Scottish Government objected to the LD approach on the grounds that it infringed the Smith Commission's 'no detriment from the decision to devolve' principle: even if Scottish revenues per capita grow at the same percentage rate as those in rUK, and even if Scottish population growth kept up with rUK population growth, the Scottish budget would be in a worse position than it would have been without tax devolution[13].

At the heart of the debate about how to index Scotland's BGA was thus a disagreement about whether priority should be given to Smith's '*no detriment from the decision to devolve*' principle, or Smith's *taxpayer fairness* principle. As we mentioned in our previous paper, Scotland's lower tax capacity means that it is impossible to achieve both principles simultaneously. Why is this?

The Barnett Formula increases Scotland's block grant by a population share of the rUK spending increase. For the UK Government's interpretation of taxpayer fairness to be achieved, then the increase to Scotland's block grant should not come about as a result of increases in tax revenues paid by rUK taxpayers on taxes that have been devolved to Scotland. This implies that the increase to the BGA should be symmetric with the increase in Scotland's block grant. In other words, the BGA should be based on a population share of rUK tax increases.

However, calculating Scotland's BGA as a population share of the ruk tax increase will tend to infringe the Scottish Government's interpretation of the no detriment principle. This is because Scotland tends to have a lower tax capacity (i.e. it raises less per capita in tax) than rUK. This means that a given per capita increase in rUK tax revenues will be equivalent to a higher percentage increase in Scottish tax revenues per person than the corresponding percentage increase in rUK revenues per person. So any approach to indexing the BGA that is based on Scotland's population share of rUK tax revenue increases will require Scotland's revenues to grow faster in percentage terms than equivalent ruk revenues, if Scotland's revenues are to 'keep up' with the BGA.

The UK Government's 'Comparable Method' introduces 'comparability factors' which take account of Scotland's lower initial tax capacity (Table 3.1). The implication is that Scottish per capita revenues do not need to grow faster than rUK revenues in percentage terms simply to match the no tax devolution outcome. However, by proposing the Comparable Method, the UK Government effectively conceded - in practice if not principle - its initial 'taxpayer fairness' argument for favouring the LD approach. By taking account of Scotland's lower initial tax capacity, there will be some redistribution of rUK income tax revenue increases to Scotland in future. This is because Scotland's population share of an ruk spending increase will tend to be more than the corresponding increase in Scotland's BGA.

The Comparable Model and population growth

But there is another reason why the Scottish Government objects to the Comparable Method. This objection relates to relative population growth.

[13] This interpretation was however disputed by the Treasury. See our previous report to understand why: http://www.ifs.org.uk/publications/8172

Scotland's population has been growing more slowly than the rUK population for several decades, and is projected to continue to grow more slowly in future. One implication of the Comparable Method is that the Scottish budget loses out from slower population growth (this was also the case of the LD method).

To see this, suppose that revenues in rUK are growing only due to population growth – revenues per capita are constant –, and Scotland's population and revenues are constant. The Comparable Method increases Scotland's BGA by a population share of the rUK tax revenue increase. But with Scotland's own revenues constant, this would lead to a fall in the Scottish government's overall budget purely as a result of rUK population growth.

The UK Government argued that the treatment of relative population change by the Comparable Method can be justified (even if it sometimes leads to perverse outcomes), because it is symmetric with the somewhat perverse treatment of relative population change by the Barnett Formula.[14]

The Scottish Government argued that it effectively has no control over the rate of relative population growth between Scotland and rUK. Thus it suggested that any BGA method should insulate Scotland from revenue risk associated with differences in population growth. It therefore favoured a method known as the Indexed Per Capita (IPC) method.

The Indexed Per Capita method

The IPC method indexes the BGA to the growth in tax revenues per capita in rUK and the rate of population growth in Scotland. For example, if revenues per capita in rUK grow by 5% and the Scottish population grows by 1%, the BGA grows by approximately 6%[15]. A key implication of using Scottish rather than rUK population growth in these calculations is that Scotland is insulated from differences in revenue growth that are the result of faster population growth in rUK. (The flip-side of course is that the Scottish budget would not capture the benefit of increased revenues in Scotland should Scotland's population grow *faster* than that in that in rUK).

The IPC mechanism has the feature that, if tax revenues per capita grow at the same rate in Scotland and in rUK, then the Scottish budget will be identical to what it would have been without tax devolution[16]. Compared to a situation without tax devolution, the Scottish budget will be better off if Scottish revenues per capita grow faster than those in rUK, but worse off in revenues per capita grow more slowly.

The Scottish Government argues that IPC thus best achieves the Smith Commission principle that there should be 'no detriment from the decision to devolve'. The Scottish Government's interpretation of this 'no detriment' principle is that the Scottish budget should be no worse off with tax devolution as without, if Scotland's tax revenues per capita grow at the same percentage rate as those in rUK.[17]

[14] The Barnett Formula rewards Scotland for relatively slower population growth on the spending side, because it allocates Scotland a population share of increased rUK spending without taking into account differential population growth. Thus it allocates extra money to Scotland even if increases in rUK spending are driven purely by its population growth, and Scotland's population is not growing. See Appendix 1 for more details.

[15] The precise rate of growth of the BGA is 6.05%, calculated as (1.01)*(1.05)*100 – 100.

[16] This is because, with equal growth rates of per capita revenues, the amount of tax raised in Scotland is equal to the BGA, so the two effects cancel out.

[17] Clearly, this interpretation can be contested since the Smith Commission did not specify whether this principle applied only at the point of devolution or in subsequent years as well; and if it does apply subsequently, having devolved

The wording of the Fiscal Framework Agreement

To return to the Agreement, what has been agreed for the next five years is to 'use the Comparable Model, whilst achieving the outcome delivered by the IPC method'.

This is a slightly unusual form of words. To refer to the methods as 'models' implies that they are something more complex than they actually are: they are relatively simple calculations. Thus to say that method A will be used, but then adjusted to give the result of method B, is tantamount to saying that method B will be used all along.

So, for the next five years, Scotland's BGA will ultimately be indexed using the IPC method.[18] This means Scotland's budget will continue to be protected from the fact that it has lower tax capacity, and from the risk that its population grows relatively more slowly than the rUK population. If Scottish and rUK revenues per capita grow at the same rate, Scotland's budget (and by extension, the UK's budget) will be no better or worse off than would have been the case had there been no tax devolution, and no adjustment to Scotland's Barnett-determined block grant.

If ultimately it makes no difference, what then is the purpose of the wording in the Agreement – that the Comparable Model will be used, whilst achieving the outcome of the IPC method? Perhaps the main purpose is political; by using the 'Comparable Model' the UK Government will be able to present an analysis of how different the Scottish budget would have been under the Comparable Model, had that method been the one actually used. By highlighting this difference, perhaps it hopes to strengthen its case for using this method beyond 2022.

Beyond 2022, the method for adjusting Scotland's block grant in respect of devolved taxes remains to be determined. The Agreement states that the two governments will 'jointly agree' how to index the block grant deduction beyond 2022. The review will be informed by an 'independent report presented to both governments by the end of 2021'. The Agreement provides no information as to who will deliver this report, nor what might happen should the two governments fail to agree an indexation method at that point.

3.3 Indexing the Block Grant Adjustment: welfare

Paragraph 16 of the Agreement states that for welfare spending, the block grant will be indexed by the Barnett Formula[19]. This means the Scottish budget will receive a population share of changes in aggregate spending on the comparable (i.e. devolved) benefits in the rest of the UK. However, in the same way that the indexation mechanism for tax will be reconciled with the IPC method over the period until 2022, Scotland's BGA for welfare will also be reconciled with the IPC method.

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revenues and welfare spending grow at the same rate as in rUK is only one of several possible definitions of 'equivalent fiscal performance' that could be used for assessing whether the principle is being satisfied.

[18] There are some timing effects implied by the convoluted wording though. Scotland's BGA will be calculated in the first instance using the Comparable Model. If it turns out subsequently that Scotland's population has grown more slowly (or quickly) than rUK's, an adjustment to Scotland's grant will be made, once population figures are available. If Scotland's population is declining relative to rUK's, this could mean that the Comparable Model initially takes off 'too much' from Scotland's Barnett determined block grant, and that the 'shortfall' is not corrected until the following year (or perhaps longer). Although the amounts involved are likely to be small, this may have some implications for borrowing.

[19] The Barnett Formula will also apply to Employment Programmes being devolved. The level of funding now associated with these programmes is so small that the question of the adjustment mechanism is not of huge importance.

Per capita spending on the benefits to be devolved is on average 19% higher in Scotland than in rUK[20]. The Barnett Formula will calculate the change to Scotland's block grant as a population share of the change in spending on the benefits that have been devolved to Scotland in rUK. A property of the Barnett Formula is that it results in convergence in per capita spending over time between Scotland and rUK[21]. This means that use of the Barnett formula to determine the funding for the devolved welfare benefits will bring per capita spending in Scotland on these benefits closer to the UK level than at present, unless resources are found elsewhere in the Scottish budget.

Unlike the Barnett Formula, the IPC method does not have a convergence property built into it. If spending per capita on the devolved benefits in rUK increases by 5%, then Scotland's BGA for devolved benefits will likewise increase by 5% per capita. This means Scotland's initial per capita spending difference is 'locked in'.

Based on what we have said so far, it is intuitive that IPC will provide a better outcome for the Scottish budget than the Barnett Formula – the Barnett Formula induces convergence in per capita spending, whilst IPC *protects* initial differences in spending. However, there is a further complicating factor, and that is relative population change. If Scotland's population grows more slowly than rUK's, the rate of convergence in per capita spending is reduced. Essentially, this is because the Barnett Formula only accounts for the relative population change in relation to the spending increment, but it does not readjust the baseline. In contrast, the IPC method fully accounts for a fall in Scotland's relative population.

The difference can be illustrated with a simple hypothetical scenario. Imagine that the population of rUK has increased, and as a result spending on the devolved benefits in rUK has increased, but that spending per capita has remained the same. Further assume that Scotland's population has remained unchanged. Under the Barnett Formula, Scotland would receive a population share of the rUK spending increase, despite the fact that Scotland's population has not changed, and there has been no change in rUK spending per capita. The IPC method, on the other hand, does not increase Scotland's grant, because neither spending per capita in rUK, nor Scotland's total population, have changed.

So on the welfare spending side, one cannot say *a priori* whether the Scottish budget will be better off under the UK Government's initial 'LD method, or the subsequent 'reconciliation' to IPC. IPC does not have a convergence property built into it, but it fully adjusts for Scotland's declining relative population. The LD method induces convergence, but this convergence is mitigated by Scotland's declining share of the UK population.

It is instructive however to consider what has happened in the recent past. Since 1999, per capita spending in Scotland on the benefits to be devolved has fallen relative to spending in rUK, from about 25% higher in 1999 to 19% higher now. Given that eligibility for these benefits is determined by UK-wide eligibility criteria, this fall in relative per capita spending presumably reflects changes in relative need.

Had these benefits been devolved in 1999, and Scotland's block grant indexed by IPC, then IPC would have retained Scotland's initial relative per capita spending differential and, given that its

[20] See for example: http://www.scottish.parliament.uk/S4_Welfare_Reform_Committee/Inquiries/David_Eiser.pdf

[21] The Barnett Formula provides the Scottish Government with the same cash-terms increase in spending per person as in rUK. But because spending per person in Scotland is higher, a given cash terms increase represents a smaller percentage increase in Scottish per capita spending. Over time, this effect erodes the initial difference in spending per capita between Scotland and rUK, producing 'convergence'.

'needs' have fallen, the Scottish budget would be in a relatively advantageous position as a result. If Scotland's block grant had been determined by the Barnett Formula, then some convergence is likely to have occurred.

But will Scotland's relative need for spending on these benefits continue to fall? If it does, then use of the Barnett Formula to determine Scotland's block grant for welfare spending may achieve a 'fair' outcome, given that it has a convergence property built into it; but if it does so, it will be purely by accident. If Scotland's relative spending need for these benefits does continue to fall, then use of IPC to index Scotland's block grant will put the Scottish budget in a relatively favourable position; and whether this is justified or not might depend on the extent to which a fall in relative spending need can be attributed to the policy interventions of the Scottish Government.

3.4 Indexing Scotland's BGA: summary

Protracted negotiations around the indexation of Scotland's BGA resulted from the two governments interpreting the Smith Commission principles in slightly different ways, and prioritising those principles to different extents.

The Agreement meets the Scottish Government's interpretation of the Smith Commission principle that there should be 'no detriment from the decision to devolve'. If Scottish and rUK revenues per capita grow at the same rate, Scotland's budget (and by extension, the UK's budget) will be no better or worse off than would have been the case had there been no tax devolution, and no corresponding adjustment to Scotland's Barnett-determined block grant. The UK Government had initially argued that Smith's 'no detriment' principle applied only to the first year of devolution; in other words that the process of devolution itself should lead to detriment in the initial year, but had no subsequent bearing on the choice of BGA indexation.

However, the Agreement does not meet the UK Government's interpretation of the Smith Commission's 'taxpayer fairness' principle. The wording of the Smith Commission Agreement implied that the 'taxpayer fairness' principle was relevant to cases where there are tax policy changes by one government or the other. The UK Government interpreted the taxpayer fairness principle more broadly, and argued that it applied to general revenue growth as well.

Given Scotland's lower tax capacity, some proportion of the future growth in rUK tax revenues will be redistributed to Scotland, irrespective of the rate of per capita revenue growth. It is arguably not clear whether the 'taxpayer fairness' principle as set out in the Smith Commission Agreement was intended to be applied to the issue of general revenue growth (as opposed to specific tax policy changes, the issue of which is discussed in Section 6), but the UK Government chose to interpret it in this way. But, by proposing the 'Comparable Model' the UK Government had already conceded on its commitment to this interpretation.

Having reneged on its commitment to the taxpayer fairness principle, the main difference between the IPC and Comparable Model approaches comes down to the treatment of relative population growth. IPC protects Scotland fully from the risk that its tax revenues fall as a result of relatively slower population growth, whereas the Comparable Model only partially insures the Scottish budget against this risk. In Section 4 we consider how much difference there is likely to be between the two methods in practical terms, and more generally, how Scotland's budget might evolve over the coming years.

4. Scenarios for Scotland's block grant and devolved tax funding

In this section we assess how the funding the Scottish Government receives under the remaining (adjusted) block grant and its devolved tax revenues may evolve in future under a number of different scenarios for revenue growth and demand for welfare spending. We do this to help quantify the sorts of impacts tax and welfare devolution may have on the resources available to the Scottish Government.

In each scenario we look at the ultimate outcome under the Fiscal Framework – which is determined by the Scottish government's preferred 'Indexed per capita' (IPC) method. That is we abstract from the fact that initially it is the 'Comparable Model' (CM) which determines the BGA and it is only once population estimates are available that it is superseded by the IPC approach during the process of reconciliation. We see this as a relatively minor timing effect and think that the final adjustment – determined by the IPC approach – is the most relevant.

We do, however, take account another issue of timing: the phased devolution of different powers and responsibilities. As set out above, full devolution of income tax is due to commence in April 2017, Air Passenger Duty will be devolved in April 2018, and half of VAT will be assigned from April 2019. Implementation dates for the devolution of Aggregates Levy and welfare benefits were not set out in the Agreement. For the purposes of these analyses we assume devolution will commence in April 2018.[22]

As well as comparing outcomes under the agreed Fiscal Framework with what would have occurred without tax devolution, we can also compare with outcomes under: the Scotland Act 2012 provisions; the UK government's initial proposal of the 'Level Deductions' (LD) approach; and the UK government's 'compromise' proposals, the 'Comparable Method' (CM).

In Section 4.1 we assume that revenues per capita from devolved taxes and spending per capita on devolved welfare benefits increase at the same rate in Scotland as in rUK.

In Section 4.2 we then examine what might happen if revenues per capita and spending per capita grow more or less quickly in Scotland than in rUK – drawing on historical experience in the period between 2001–02 and 2014–15. (Section 5 looks in more detail about the risks associated with differential revenue and spending growth, and whether the borrowing powers available to Scotland will be sufficient to cope with these risks).

It is important to realise that these are indicative scenarios only – they are *not* forecasts of devolved tax revenues or welfare spending. As far as we are aware no such forecasts are in the public domain. The OBR, for instance, has produced forecasts for the revenues to be devolved to Scotland under the Scotland Act 2012 but not those being devolved under the Scotland Bill 2015–

[22] We have chosen this date to reflect the fact that there may be more outstanding issues for the devolution of these powers than for income tax, which will already be partially devolved this April under the provisions of the Scotland Act (2012), but that the difficulties in identifying Scottish aggregates levy revenues and welfare spending are likely to be less acute than the difficulties in identifying Scottish VAT revenues.

16.[23] A full forecast would need to forecast a range of variables including income growth, employment growth, house price growth, etc., which is beyond the scope of this report. [24]

And of course, actual revenues from devolved taxes and spending on devolved welfare benefits will depend crucially on Scottish policy in each of these areas. This will be a decision for the next Scottish Government. The scenarios are based on existing policy remaining the same in Scotland and rUK.

4.1 Equal revenue and spending growth per capita in Scotland and rUK

In our first set of scenarios we assume that revenues per capita from devolved taxes and spending per capita on devolved welfare benefits increase at the same rate in Scotland as in rUK. To model this we take the UK government's plans for the Scottish block grant as far as 2019–20,[25] the latest OBR medium-term forecasts and long-term projections for UK revenues[26], the latest DWP forecasts for benefit spending by benefit[27], and the latest population projections (which show Scotland's population growing by around 0.3% annually, rather slower than the 0.6% in rUK).[28,29] During the first five years of devolution to 2021–22, these assumptions imply the following changes in real-terms revenue or spending per capita in both Scotland and rUK:

- Income tax: +2.0% per year
- Stamp duty land tax and landfill tax (combined) : +4.1% per year
- Air passenger duty: +2.3% per year
- VAT: +1.6% per year
- Aggregates levy: +4.1% per year
- Devolved welfare: –0.7% per year

We also project forward for the following ten years to 2031–32, for which a BGA indexation mechanism will have to be agreed after the Scottish parliamentary elections of 2021. This allows us to show the longer-run implications of continuing with the IPC approach agreed for the first five years, and of moving to a different approach in that later period. During this later period real-terms devolved revenue and welfare spending, and 'comparable' spending in England are assumed to grow by approximately 1.9% per year per capita, in line with OBR projections of long-term growth in real GDP per capita.

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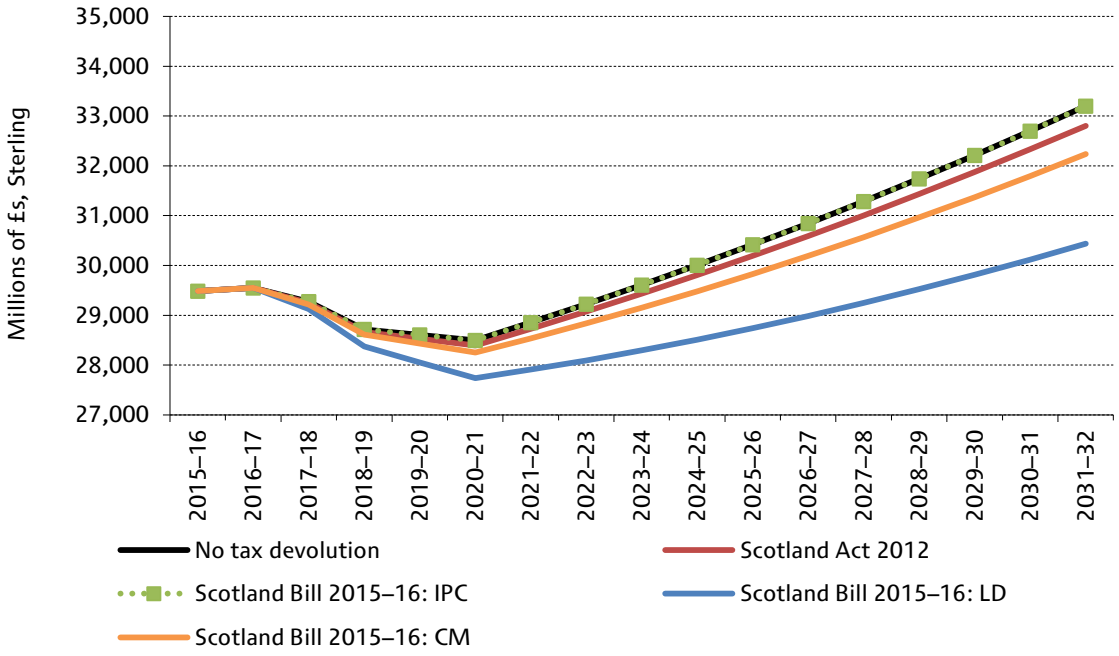
[23] *Devolved Taxes Forecast*, OBR, available at: http://budgetresponsibility.org.uk/.
[24] Furthermore, in its devolved taxes forecast, the OBR generally assumes that underlying incomes and other economic activities evolve in the same way as in the UK as a whole, which a more in-depth forecast may not do.
[25] Spending Review and Autumn Statement 2015, HM Treasury.
[26] Forecasts for the period to 2020–21 are based on the OBR's *Economic and Fiscal Outlook* November 2015. Forecasts for the period after 2020–21 are based on the OBR's *Fiscal Sustainability Report* June 2015. Both are available: http://budgetresponsibility.org.uk/.
[27] These forecasts are available to 2020-21. Beyond this date we assume welfare spending grows at the same rate as revenues.
[28] Available on the ONS website.
[29] The baseline BGAs are based on uprating the figures for devolved revenues and welfare spending in Government Expenditure and Revenue Scotland (GERS) 2013–14. This uprating procedure is based on GERS 2014–15 figures for revenue and spending growth in Scotland between 2013–14 and 2014–15, and OBR forecasts for the UK as a whole thereafter.

Given these assumptions, Figure 4.1 shows the real-terms amount the Scottish government would have to fund *existing devolved services* (i.e. the amount available from its adjusted block grant and devolved revenues after subtracting devolved welfare spending) over the period to 2031–32, under the following funding regimes:

- Full funding via the Barnett-determined block grant (no tax devolution)[30];
- The Scotland Act 2012 provisions;
- The Scotland Bill 2015–16 provisions, and;
    - Indexing the BGA according to the IPC approach, which is the method which will ultimately be used for the five years to 2021–22 as set out in the Fiscal Framework Agreement (and as preferred by the Scottish Government);
    - Indexing the BGA according to the LD approach, as initially proposed by the UK government, and;
    - Indexing the BGA according to the CM approach, which plays the role of a shadow indexation method under the Fiscal Framework Agreement (this method was the UK government's effort at a compromise with the Scottish Government).

Figure 4.1. Scottish block grant and devolved revenue under scenario with the same per capita rate of growth of devolved revenue and welfare as in rUK (£s millions, 2015–16 prices)



Sources: OBR EFO March 2016, FSR 2015; HMT AS 2015; GERS 2013-14 and 2014-15; DWP medium term expenditure forecasts; ONS population projections.

The Figure shows that the Scottish Government's funding is set to fall over the next few years, as a result of cuts to Scotland's block grant made as part of the UK government's fiscal consolidation efforts. Given the assumptions on spending and revenue growth made above, once this fiscal repair job is complete, funding would then increase under each of the funding regimes, albeit by differing amounts.

[30] With the exception of council tax and non-domestic rates, which have long been devolved to Scotland.

With devolved revenues and welfare spending per capita growing at the same rate in Scotland as in rUK, use of the IPC approach would mean the amount available to the Scottish Government under the Scotland Bill 2015–16 devolution provisions would be the same as if there were no tax and welfare devolution. That is, the IPC approach satisfies the Scottish Government's interpretation of the 'no detriment' principle. Each of the other regimes would see less money available to the Scottish Government. (The flip side is that there would be more money available to the UK Government – as already mentioned, arguments about the size and appropriate indexation of the BGAs are basically a zero-sum game).

For instance, the UK government's initial LD proposals would have seen the Scottish Government have almost £1 billion a year less in real-terms available by 2021–22. Table 4.1 shows that most of this is due to increases in the BGA for income tax (£14.8 billion) outpacing actual revenues (£14.1 billion). This reflects the fact that the population-share of the cash-terms changes in revenue in rUK added to Scotland's BGA for income tax each year under this approach would exceed the growth of Scotland's own tax revenues. By 2031–32, the reduction in the Scottish Government's budget relative to 'no devolution' and the IPC approach would be closer to £2.8 billion a year in real terms, with over two-thirds of this gap being due to income tax, and most of the rest attributable to Stamp Duty Land Tax (in the 'other taxes' category in Table 4.1).

The CM approach, initially proposed by the UK government as a compromise with the Scottish Government, and being used to calculate the provisional BGAs before these are superseded by the final adjustments once population estimates are available, leads to outcomes closer to the IPC approach than the LD approach in this scenario. For instance, the resources available to the Scottish Government are around £330 million less than under the IPC approach and around £610 more than under the LD approach in 2021–22. These figures would grow to £1.0 billion and £1.8 billion by 2031–32.

Thus in offering the CM approach it seems that the UK government moved around two-thirds of the way from its initial position (LD) to the Scottish Government's position (IPC). Of course, that was not enough for the Scottish Government which, as already discussed, argued that the remaining population growth-driven reduction in spending power under the CM approach would violate the 'no detriment' principles.

Three other things highlighted in Figure 4.1 or Table 4.1 are also worth pointing out.

First is the amount of revenues from 'devolved' taxes in rUK that could be implicitly transferred to Scotland in the years ahead. As described in Section 3, the LD approach initially proposed by the Treasury would have ended these transfers by offsetting any increase in the block grant when these revenues are spent by an equal increase in the block grant adjustment. The scale of the implicit transfers under other regimes can therefore be assessed by comparing Scottish budget outcomes with the LD approach. Hence in this scenario for revenue growth, by 2021–22 almost £1 billion extra rUK revenues from the 'devolved' taxes would be implicitly transferred to Scotland under the chosen IPC approach (rising to £2.8 billion if this approach were to remain in place in 2031–32). Given equal growth in revenues and welfare spending per capita in Scotland and rUK, the regime without tax or welfare devolution would see implicit transfers of the same size in the years ahead. So the use of the IPC approach for tax devolution does not, on its own, mean "bigger" transfers to Scotland than would have occurred without devolution, but it would certainly not end them, as the

UK government had initially argued should be the case once a tax is devolved – and the LD approach would have delivered.[31]

Table 4.1 Devolved revenues & welfare spending, and block grants & BGAs by funding regime (£s millions, 2015–16 prices)

Time period	Revenues/ Spending	Block grants and BGAs by funding regime			
		No Devolution	IPC	LD	CM
2021-22					
Adjusted Block Grant[a]	n/a	28,850	8,200	7,260	7,890
Income Tax	14,090		14,090	14,770	14,330
VAT	5,310		5,310	5,370	5,370
Other Taxes	1,250		1,250	1,450	1,270
Welfare	2,610	2,610	2,610	2,610	2,610
Total funding[b]	***n/a***	***31,470***	***31,470***	***30,520***	***31,150***
Amount for existing services[c]	*n/a*	*28,850*	*28,850*	*27,910*	*28,540*
2031-32					
Adjusted Block Grant[a]	n/a	33,200	7,470	4,830	6,630
Income Tax	17,550		17,550	19,500	18,150
VAT	6,620		6,620	6,840	6,810
Other Taxes	1,560		1,560	2,030	1,610
Welfare	3,250	3,250	3,250	3,130	3,130
Total funding[b]	***n/a***	***36,450***	***36,450***	***33,690***	***35,490***
Available for existing services[c]	*n/a*	*33,200*	*33,200*	*30440*	*32,230*

Note: (a) 'Adjusted block grant' is the existing blog grant minus the BGAs for devolved revenues.(b) 'Total funding' is the 'adjusted block grant' plus devolved tax revenues plus the welfare block grant addition. (c) 'Available for existing services' is total funding minus welfare spending. The reported amount therefore implicitly assumes that any shortfall in funding for welfare from the welfare block grant addition is made up for by utilising other funds.
Source: As Figure 4.1

Second is that even with tax revenues per capita growing at the same rate in Scotland as in rUK, the share of the Scottish Government's budget from devolved revenues is likely to increase in the years following devolution. This is because of the 'Barnett Squeeze' briefly mentioned in Section 2 and discussed in more detail in Appendix 1. In essence the 'squeeze' means the underlying Barnett-determined block grant (i.e. before any BGAs are subtracted or added) will increase at a slower percentage rate than comparable spending in England, and more than likely, devolved revenues.

[31] Transfers would be a little less under the CM approach, suggested as a compromise by the UK government, but would still be substantial (£0.7 billion in 2021–22, and £1.9 billion in 2031–32). In proposing this the UK government therefore moved substantially away from its original interpretation of 'taxpayer fairness'.

Under the scenario we have modelled, devolved revenues would account for 71% of combined funding from these revenues and the block grant in 2031–32, up from around 66% in 2021–22.

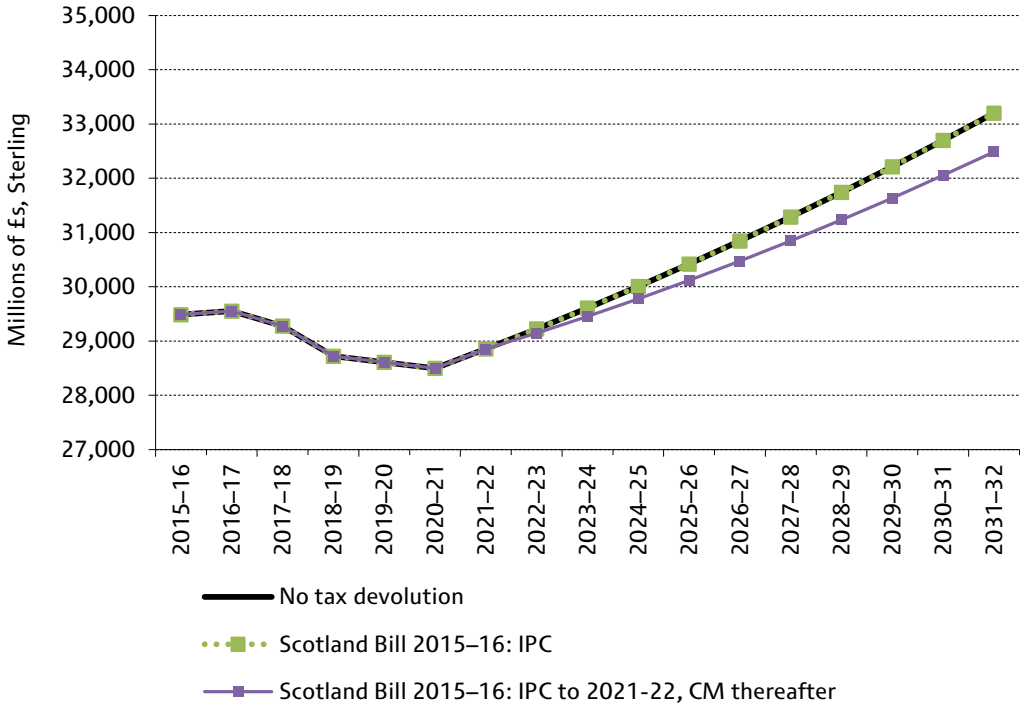
The third is that under this scenario, the Scotland Act 2012 provisions would have seen the Scottish Government's budget fall relative to a regime without tax and welfare devolution. This is because the agreed method for indexing the smaller BGA required for the partial devolution of income tax – termed the Indexed Deduction or ID approach – takes no account of Scotland's relatively slower population growth. And it means that if revenues per capita grow at the same rate in Scotland as in rUK but population grows more slowly in Scotland (as in this scenario) then the Scottish Government will have more funding under the Scotland 2015–16 provisions than it would have under the already agreed plans for implementing the provisions of the Scotland Act 2012.

What if a different approach is used after 2021–22?

The modelling above uses the same BGA indexation mechanism in the period to 2021–22 (for which the IPC approach is agreed) and in the decade thereafter. But the UK and Scottish governments will need to negotiate the BGA indexation method to be used after 2021–22 in the months following the 2021 Holyrood elections. It may be decided to retain the IPC approach or adopt a different approach. Figure 4.2 shows the effects of switching from the IPC approach to the CM approach over the subsequent decade to 2031–32. While this is only one of several possible scenarios it is worth exploring as the UK government had initially pressed for agreement that this should be the starting position for these later negotiations, and the default approach for subsequent BGA indexation should no agreement be reached in these negotiations.

The Figure shows that switching to the CM approach after 2021–22 would reduce the amount available to Scotland compared to continuing with the IPC approach (or compared to there being no tax devolution). This is because population projections are for Scotland's population to continue to grow less quickly than that of rUK and while the IPC approach takes full account of this when setting the BGA, the CM approach does not. By 2026–27, the reduction in spending power would amount to around £380 million annually, and by 2031–32, around £740 million annually (around 2% of devolved revenues and adjusted block grant by that date). Conversely use of the CM approach instead of continuing with the IPC approach would *save* the UK government these sums. With significant sums at stake in the years after 2021–22 it therefore seems that the stage is set for another round of difficult negotiations in a little over five years time.

Figure 4.2. The effect of switching to the CM approach post 2021–22, (£s millions, 2015–16 prices)



Sources: As Figure 4.1

4.2 Faster or slower revenue and spending growth per capita in Scotland than in rUK

While devolved revenues and welfare spending per capita may grow at the same rate in Scotland as in rUK, they may also grow more or less quickly, whether due to policy decisions or underlying socio-economic factors. In this section we explore the potential consequences of such outcomes, drawing on historic trends in Scottish and UK tax revenues and welfare spending.

In particular, we examine the rate of growth of income tax revenues per capita and spending per capita on the welfare benefits to be devolved in Scotland and rUK for the period between 2001–02 and 2014–15.[32] During this period:

- Nominal income tax revenues per capita grew by 2.8% per year in Scotland, on average, compared to 2.4% in rUK. In other words, Scottish revenues grew at 1.17 times the rate as those in rUK.[33]
- Nominal spending on the benefits to be devolved grew by 4.1% per year in Scotland, compared to 4.4% per year in average in rUK. In other words, welfare spending in Scotland grew at 0.94 times the rate as spending in rUK.

Drawing on this, we model two scenarios for Scotland.

[32] Sources: Department for Work and Pensions *Benefit Expenditure Statistics*, and *Government Expenditure and Revenue Scotland 2014–15*.

[33] Scottish income tax revenues per capita grew at around 1.17 times the rate of those in rUK during the period between 2001–02 and 2007–08, before the financial crisis too (6.5% versus 5.5% in rUK).

Scenario (1) is a relatively 'optimistic' scenario with relatively rapid growth in income tax revenues: Scotland's nominal income tax revenues per capita grow at 1.17 times the rate as those in rUK, implying real-terms growth of 2.8% per year, compared to 1.9% in rUK, over the 15 years to 2031–32. Such a scenario would mean that by 2021–22, Scotland's income tax revenues per capita would have increased from 87.5% to 90% of those in rUK. And by 2031–32 they would be 99% of rUK levels.

At the same time, Scotland's nominal welfare spending per capita is assumed to grow at 0.94 times the rate as in rUK, implying real-terms growth of 0.8% per year, compared to 1.1% in rUK, over the 15 years to 2031–32. Thus, this scenario sees Scotland experience relatively slow growth in welfare spending – with spending per capita falling from 119% of rUK levels to 116% by 2021-22 and 114% by 2031–32.

Figure 4.3 shows that even over relatively short periods of time, more rapid income tax growth and slower welfare spending growth will translate into significant differences in the Scottish Government's spending power once the Scotland Bill provisions are in place. For instance, after five years of indexing according to the IPC approach – as set out in the Fiscal Framework agreement –, the amount available to spend on existing devolved services would be between £600-700 million a year higher than without devolution (and compared to the case where devolved income tax revenues and welfare spending grew at the same rate per capita as in rUK, as in Section 4.1). If the IPC approach were continued in the years beyond 2021–22 the additional spending power would amount to around £2.4 billion a year by 2031–32 (over 7% of the amount Scotland would receive in that year in block grant if there was no tax or welfare devolution).

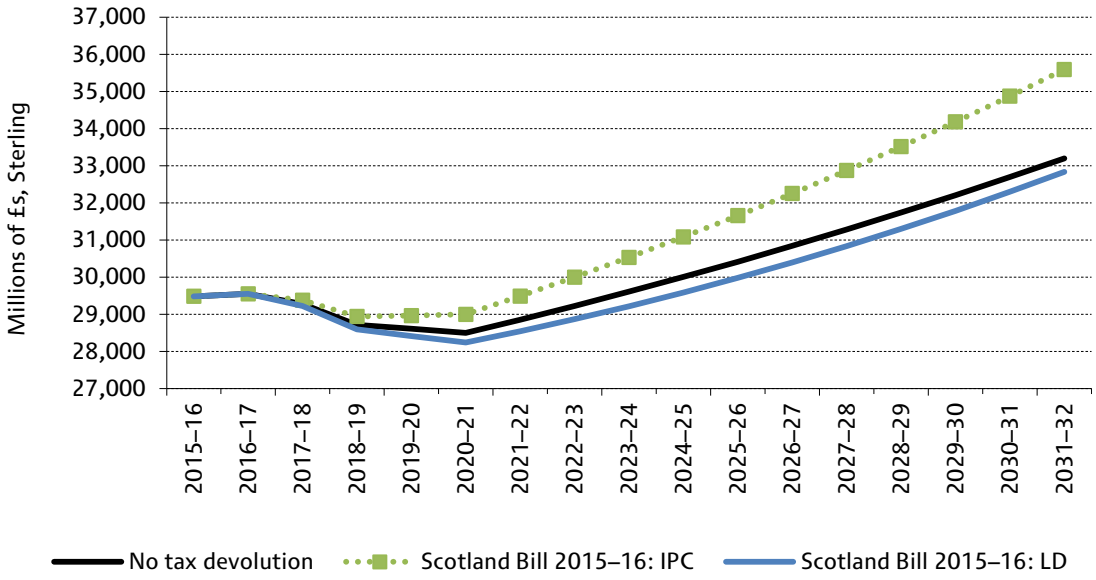
The Figure also shows the amount available for spending on existing services if the LD approach were used to index the BGAs. Even with real terms income tax revenues per capita growing around half as quick again (2.8% per annum compared to 1.9%) and welfare spending growing less quickly in Scotland than rUK, the amount available to the Scottish Government to spend on existing devolved services would be lower with tax and welfare devolution than without, over our 15 year horizon. This reflects the fact that even with income tax revenues growing at a more rapid *percentage rate* per capita, the *cash-terms* growth in *aggregate* Scottish income tax revenues would be less than Scotland's population-share of the cash-terms growth in aggregate rUK income tax revenues (which is what the LD approach uses to update the income tax BGA).

Finally, recall that the LD would end any implicit transfers of the growth in revenues from devolved taxes in rUK to Scotland via the Barnett formula, and that the scale of any transfers under other regimes can be calculated by comparison with the LD approach. Doing this shows that under our scenario of more rapid revenue growth in Scotland, almost £1 billion of such revenues would be implicitly transferred to Scotland a year by 2021–22 (and £2.8 billion by 2031–32) under the IPC approach. This is virtually the same as in the scenario where Scottish revenues grew at the same rate as those in rUK (see Section 4.1). In other words, the amount that will implicitly be transferred to Scotland after devolution is effectively invariant to what happens to Scotland's own revenues (it depends only on the growth in rUK revenues). This is the natural corollary of allowing Scotland to keep all of its own revenues.

In contrast, the pooling and sharing of revenues from rUK *and* Scotland that would occur without tax devolution means that the implicit transfer of rUK revenue growth to Scotland is smaller with more rapid revenue growth in Scotland (and larger with slower revenue growth in Scotland). For

instance, in this scenario, the transfer would be around £200-400 million in real terms in both 2021–22 and 2031–32.

Figure 4.3. The effects of faster income tax revenue and slower welfare spending growth in Scotland than in rUK, (£s millions, 2015–16 prices)



Sources: As Figure 4.1. In addition, historic revenue (GERS 2014–15) and benefit expenditure figures.

Scenario (2) is a more 'pessimistic' scenario with slower revenue growth and more rapid welfare spending growth. In particular Scotland's nominal income tax revenues per capita are assumed to grow at 0.85[34] times the rate as those in rUK, implying real-terms growth of 1.1% per year, compared to 1.9% in rUK, over the 15 years to 2031–32. Scottish income tax revenues per capita would fall from 87.5% of rUK levels to 84% by 2021–22 and 77% by 2031–32.

At the same time, Scotland's nominal welfare spending per capita is assumed to grow at 1.06 times the rate as in rUK, implying real-terms growth of 1.4% per year, compared to 1.1% in rUK, over the 15 years to 2031–32. Devolved welfare spending per person would increase from 119% of rUK levels to 124% by 2031–32.

Figure 4.4 shows the effects of this scenario. Using the IPC approach to indexing the BGAs, the spending power of the Scottish Government would be around £500 million lower in 2021–22 than without tax and welfare devolution. By 2031–32 the funding gap would increase to £2.1 billion.[35] Thus, differences in devolved revenue and welfare spending growth per capita could have notable effects on the Scottish Government's budget if sustained for just a few years, and significant effects if maintained on a longer-term basis.

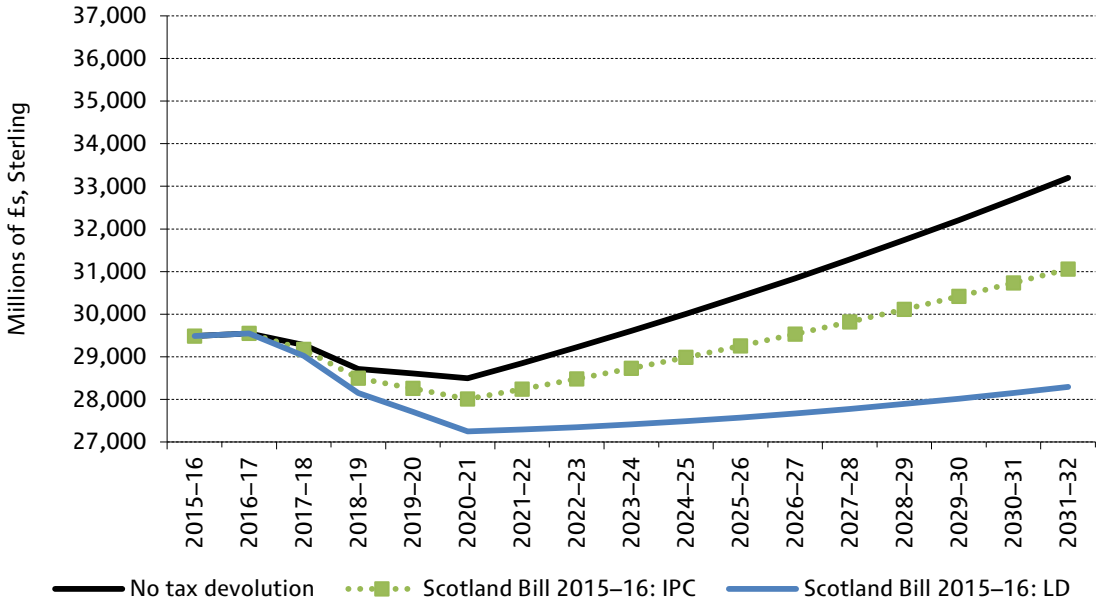
It also again demonstrates that the implicit transfer of rUK revenues to Scotland – measured by the difference between the IPC and LD approaches – is invariant to the slower growth in Scottish

[34] Calculated as (1/1.17).

[35] Figure 4.4 also shows that if the LD approach were used to index the BGAs then slow revenue growth would have an even bigger effect on the Scottish Government's budget.

revenues once taxes are devolved. In contrast, these implicit transfers would be larger if Scottish revenues grew less quickly and taxes were not devolved to Scotland.

Figure 4.4. The effects of slower income tax revenue and faster welfare spending growth in Scotland than in rUK, (£s millions, 2015–16 prices)



Sources: As Figure 4.4

Summary

This section has used a number of scenarios to examine how the plans for tax and welfare devolution set out in the Scotland Bill 2015–16 and the associated block grant adjustments set out in the Fiscal Framework Agreement may affect the resources available to the Scottish Government in the years ahead. To re-iterate, these scenarios are indicative only and are not fully fledged forecasts for Scottish Government revenues or spending. But they do demonstrate a number of key issues and features of Scotland's new system of funding:

- The projected slower population growth in Scotland than in rUK means that the IPC approach, which ultimately determines the BGAs for the period until 2021–22, is likely to be more generous to Scotland than the CM approach, which is used to calculate the provisional BGAs which are then superseded when estimates for population change are available. The additional money received under this reconciliation process could amount to over £300 million a year in real terms in 2021–22, and £1 billion a year by 2031–32 if the approach is maintained in the longer term under our baseline set of assumptions.

- The difference in the resources available to the Scottish Government under the chosen IPC approach and the UK government's initial LD proposals is even greater – perhaps around £900 million a year by 2021–22, and £2.8 billion a year by 2031–32.

- The process of agreeing the BGA method is a zero-sum game. The implication of the Scottish Government being £900m or £2.8bn better off under the IPC approach than the LD

approach is that an additional £900m or £2.8bn revenue from the equivalent 'devolved' taxes in rUK would be implicitly transferred to Scotland via the Barnett-determined block grant.

- Such transfers would likely occur in the absence of tax and welfare devolution. Indeed, if devolved revenue and welfare spending grows at the same rate in Scotland as in rUK then the IPC approach delivers the same funding – and hence the same implicit transfer of tax revenues from rUK – as would occur without tax and welfare devolution.

- However without devolution of taxes, the scale of these implicit transfers would vary according to whether Scotland's revenues grow more quickly – in which case the implicit transfer would be smaller, or even the other way around (i.e. from Scotland to rUK) – or less quickly – in which case the implicit transfers would be bigger. In contrast, the implicit transfers Scotland receives do not vary if its revenue growth is faster or slower than that in rUK when taxes are devolved and BGAs are indexed according to the IPC approach. This is because the path of these transfers is effectively 'locked in' on the basis of Scotland's tax capacity – i.e. its relative revenues per capita – at the point of devolution.

- The Scottish Government will rely on devolved revenues for a larger share of its budget in the years ahead even if its revenues per capita grow at the same rate as those in rUK and there is no further tax devolution. This is because the 'Barnett squeeze' is reducing the size of the Scottish block grant relative to overall spending and revenues.

- Faster or slower growth in devolved revenues or welfare spending will have notable effects on the Scottish Government's budget if sustained. Illustrative scenarios based on historic differences in income tax revenue and welfare spending growth show impacts on the Scottish budget of over £500 million a year after five years and over £2 billion a year after 15 years.

This final point demonstrates the financial incentives for revenue growth and efforts to reduce the demand for welfare spending that the devolution of tax and welfare powers will bring. It also shows that devolution brings with it risks too. Perhaps most significant is long-term divergence in revenue or welfare spending trends. But revenues and welfare spending can also be volatile from year to year and Scotland will soon face some of this risk. It is this issue of volatility and risk we turn in the next Section.

5. Risk and uncertainty: borrowing and forecasts

Scotland's devolved tax revenues will face a variety of risks that may cause their value to rise or fall. Welfare funding is sensitive to the number of claimants for these benefits, which can jump about a bit from year-to-year. Without some borrowing mechanism to smooth such volatility, the Scottish Government's budget would also be subject to significant instability, making it difficult to plan and deliver public services on a predictable basis.

Some insurance against volatility has been built into the BGA mechanisms described previously. A macroeconomic shock, such as a decline in demand for British exports, will reduce tax revenues both in Scotland and in rUK. On the one hand, this will reduce the Scottish Government's own revenues, but on the other, it will reduce the amount taken off the Scottish Government's block grant via the BGA. Why? Because the IPC method of indexing the BGAs (and indeed the CM and LM methods) links the BGA to revenues in rUK: when these fall, so does the BGA. Thus, by design, Scotland's budget is insulated from economic shocks which affect the UK as a whole.

If the Scottish budget is largely protected from economic turbulence that affects the UK as a whole by the BGA, then what risks will it face? Economic shocks that are specific to Scotland and therefore have no effect (or a more muted effect) on rUK tax revenues or welfare spending could potentially disrupt the Scottish budget. The most obvious current example is the fall in the oil price, which is having a negative effect on the Scottish economy due to its role as an oil producer, while having a beneficial effect on economic activity in rUK which is largely a consumer of petroleum products and therefore benefits from lower prices.

If one believes that Scotland-specific shocks are temporary, then borrowing can be used to smooth their impact. The design of such borrowing powers forms an integral part of the Fiscal Framework Agreement.

It is also important to recognise that budgets have to be set in advance, before tax revenues and welfare spending are known. Therefore, they have to be based on forecasts of future revenues and welfare spending. Such forecasts are subject to error, which poses a further risk to the Scottish budget. Such errors are likely to be greater and of greater consequence, the greater are Scotland-specific fluctuations in tax revenues or welfare spending. Forecast error provides another rationale for giving the Scottish government borrowing powers.

However, there is a significant moral hazard issue in the linkage of borrowing to forecasts. It is important that forecasts are not manipulated to support a particular policy stance. Rather, they should stem from genuine forecast errors. Hence the process of designing and setting forecasts needs to be transparent and independent of government in order to maintain the confidence of creditors and potential creditors.

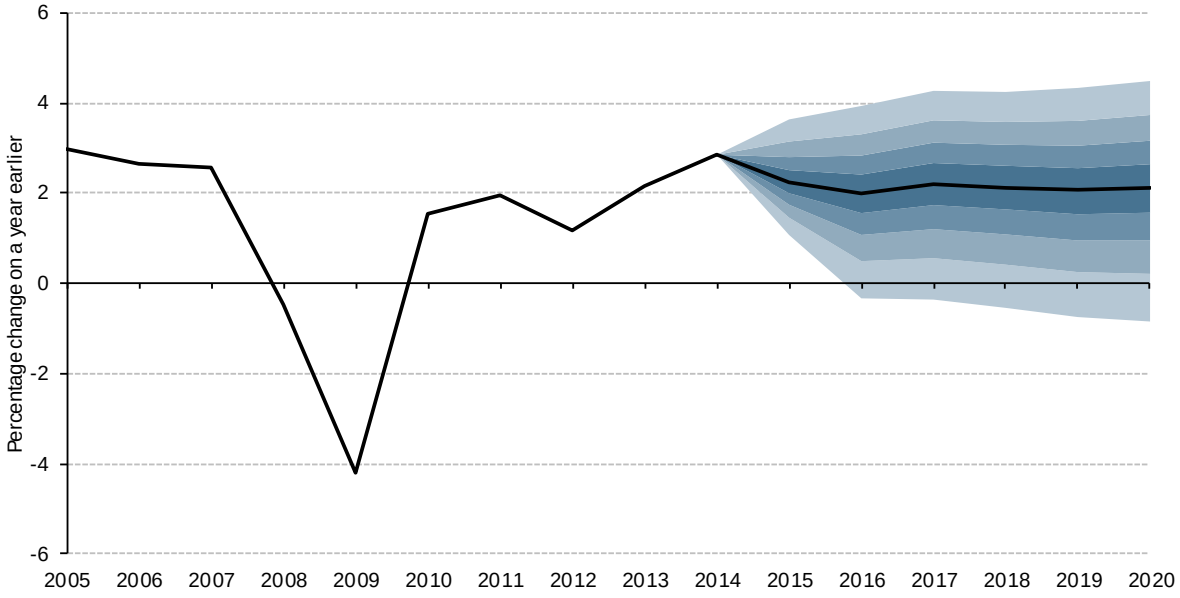
The BGA has perhaps been the most contentious area of the agreement and as a result its provisions in relation to forecasting and borrowing have attracted less attention. Nevertheless, these issues are also vital to the establishment of a sustainable devolution of tax and welfare powers to Scotland. Consequently, this Section analyses the agreement in relation to its provisions relating to forecasting and borrowing.

5.1 Forecasting

In the UK, the forecasts on which the Chancellor's budgetary decisions are made are produced by the Office of Budget Responsibility (OBR). This has been the case since 2010, when the coalition government set up the OBR, following pressure to remove responsibility for forecasting from the UK government. The OECD lists 17 of its member states as using independent fiscal institutions to monitor compliance with fiscal rules and to produce or endorse macroeconomic forecasts[36]. The EU now requires member states to have independent bodies to fulfil these functions.

The Scottish government initially proposed that the Scottish Fiscal Commission, the body that has already been set up to fulfil this monitoring function, should *endorse*, rather than produce, macroeconomic forecasts for Scotland. As a result of the fiscal framework negotiations, it has been agreed that the Fiscal Commission will *produce* the forecasts. This could be seen as a victory for the UK government, in that official forecasts for Scotland will be produced "at arms length" from the Scottish government, along similar lines to those produced by the OBR.

Figure 5.1: Uncertainty around OBR forecasts of UK GDP Growth



Source: ONS, OBR

The Scottish Fiscal Commission may seek to represent the uncertainty that will inevitably be associated with its forecast in a similar way to the OBR.[37] Figure 5.1 shows the OBR's representation of the uncertainty associated with its own March 2016 forecasts of UK GDP with a "fan diagram", where lighter shades of blue represent 10% steps in the OBR's assessment of potential forecast errors. It is immediately obvious that there is a significant degree of uncertainty in economic forecasting: for forecasts for the upcoming financial year (2016–17), there is only an 80% chance that growth is within approximately +/-2 percentage points of the central forecast of 2%.

Fiscal forecasts are also subject to additional sources of uncertainty. Forecasting tax revenues, for instance, requires forecasting the tax base – for instance the amount of taxable income on which income tax can be levied –and estimating the impact of any planned policy changes. The fact that

[36] OECD (2013) *Independent Fiscal Institutions.* Accessed at: http://dx.doi.org/10.1787/gov_glance-2013-en

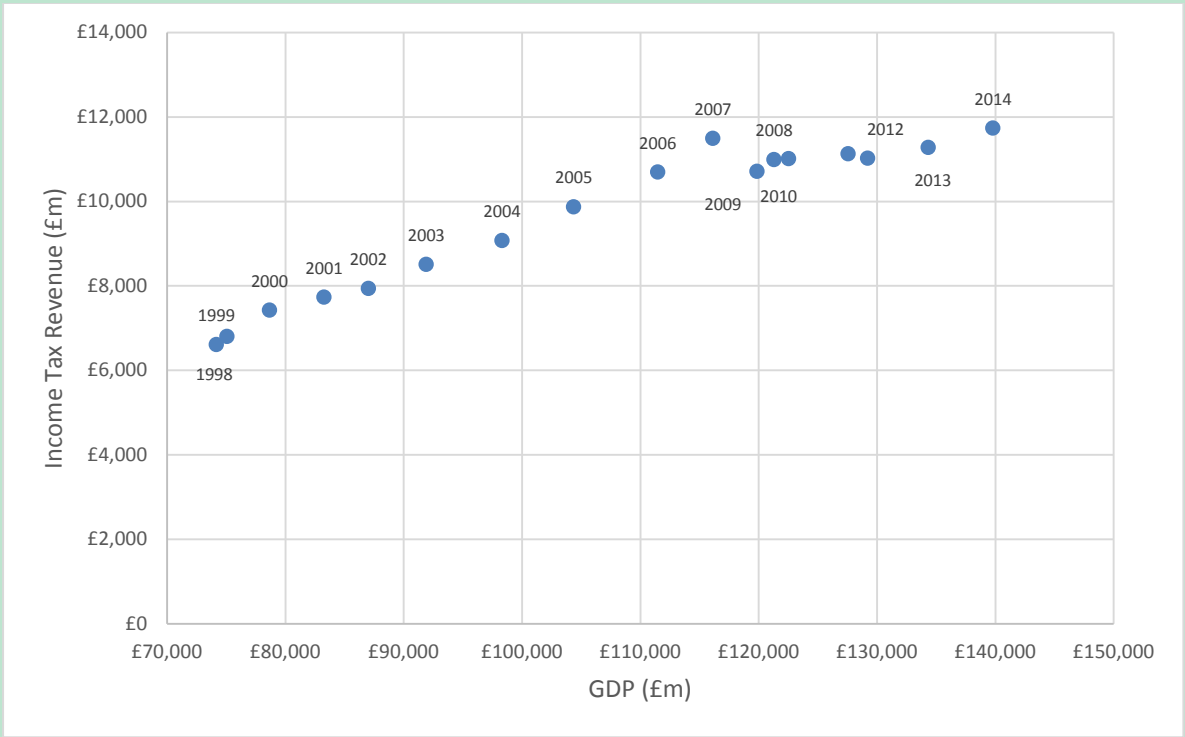
[37] The formal mechanisms for representing and assessing forecasts are described in Office of Budget Responsibility (2012) "How We Present Uncertainty", available at: http://bit.ly/1RcXFK9.

tax bases may not grow in line with the economy, and policy changes can have significant impacts on revenues means that the relationship between revenues from a tax and economic growth can vary significantly over time as shown in Box 5.1. Some of these factors – especially those in relation to policy changes – may be relatively easily incorporated into fiscal forecasts, but others may be more difficult to account for.

Box 5.1: How have income tax revenues in Scotland grown in the past and what does that suggest about the difficulties of making forecasts of future tax revenues?

Figure 5.2 shows how revenues from income tax in Scotland have varied with GDP between 1998–99 and 2015–16. While it was clear that these were moving together in the period up to 2008–09, the post-recession behaviour has been significantly different. Scottish nominal GDP grew by 63 per cent between 1998–99 and 2008–09: over the same period, income tax revenues grew by 66 per cent. Revenue growth more than matched GDP growth even though the basic rate was reduced from 23p to 20p over this period. However, between 2008–09 and 2014–15, nominal GDP grew by 15.2 % but income tax revenues only increased by 6.8%: the growth in money GDP since 2008–09 has not been matched by a comparable rise in Scottish income tax revenues.

Figure 5.2: Scottish Income Tax Revenues and Nominal GDP 1998–99 to 2014–15



Source: Scottish Government and HMRC

There are several contributory factors to the change in the relationship between nominal GDP and income tax revenues. First is the fact compared to the pre-crisis period, a greater proportion of GDP growth in the post-crisis period has been due to employment growth than productivity and wage growth: a given increase in income generates less additional income tax revenue if it results from employment growth because the income tax personal allowance means much of this income will

not be subject to tax (it is not part of the effective tax base). A second factor is policy changes which have acted to reduce revenues – such as the large increases in the income tax personal allowance.

Of course, no credible fiscal forecast would be as naive as a simple projection of past revenue trends. Some of the factors mentioned above, such as the increase in the income tax personal allowance, had a fairly predictable impact in reducing revenues. But other issues were less easy to anticipate and did lead to what turned out to be systematic errors in forecasts. When making its 2011 and 2012 forecasts for the UK as a whole in, for instance, the OBR had to revise down revenue growth not only due to weaker-than-expected growth in GDP but also the fact that more of that growth was linked to employment growth and less linked to productivity and wage growth than expected.

Such difficulties in forecasting are one reason why it's important that the devolution of additional tax and spending powers and responsibilities is accompanied by additional powers to borrow and hold reserves: if revenues are less or spending more than forecast, borrowing or reserves can be used (on a temporary basis) to make up for any Budget shortfall. The provisions for these powers are discussed in Section 5.2.

The Fiscal Framework Agreement includes a provision for a "reciprocal statutory duty of cooperation between the Scottish Fiscal Commission and the OBR". Clearly, it is sensible that the two bodies have a working arrangement, even if they may disagree on the specifics of forecasts. Nevertheless, this will be an interesting challenge to both organisations. While agreements to share data and forecasting methodologies are sensible, it is not clear how genuine disagreements over forecasts for either the UK as a whole or for Scotland will be handled. This is potentially difficult since such disagreements may be exploited by politicians on both sides of the border.

And, although the Fiscal Framework implies that there should be "close and constructive working between the two bodies", there is no guarantee that this will be the case. Without clear protocols for joint working, there is potential for substantive and damaging disagreement between the OBR and the Scottish Fiscal Commission over such issues.

The interaction between the OBR and the Scottish Fiscal Commission will also be important because it may influence the extent to which their forecasts are correlated. Why does this matter? Suppose that the Scottish Fiscal Commission takes an overly optimistic view of tax revenue growth in Scotland, while the OBR takes the same optimistic view of revenue growth in rUK. These positively correlated errors will work together to increase the impact of forecast errors on Scotland's budget: at the same time as suffering from a BGA that has turned out to be "too big", the Scottish Government will also have less of its own revenues than anticipated.

Of course, even if the OBR and Scottish Fiscal Commission make their forecasts independently of each other, forecast errors are likely to be positively correlated, at least for common shocks that affect both Scotland and rUK: they will be using much of the same information in their forecasts and that will tend to lead to similar forecasts. Shocks that affect Scotland disproportionately or differently to the rest of the UK could also lead to forecasts for the amount available from the (adjusted) block grant and Scotland's devolved revenues to differ from forecasts.

In order to manage the budgetary risk associated with forecast errors and more general revenue and welfare spending volatility, the Fiscal Framework provides Scotland with additional borrowing powers. The next section describes and appraises these powers.

5.2 Scotland's new borrowing powers

The Fiscal Framework Agreement sets fixed cash limits which extend the borrowing powers in the Scotland Act 2012. Box 5.2 sets out capital borrowing powers that can be used to fund investments. The rest of this section then looks at resource borrowing powers – that is, borrowing powers that can be used to (temporarily) top up the resources available to fund day-to-day spending on public services and devolved welfare benefits.

Box 5.2. Capital Borrowing powers

The statutory limit for borrowing for capital will be increased from £2.2 billion to £3 billion, and the annual borrowing limit increased to £450 million. This goes less far than some had hoped: the Smith Commission suggested that capital borrowing might be managed using a "prudential" regime, the same control system as used by local authorities. This would have allowed the Scottish Government to, in effect, set its own limit for capital borrowing based on the affordability of interest and principal repayments.

In the context of a UK-wide fiscal rule that there should be an overall budget surplus in "normal times" (defined as growth of 1% or more), it is perhaps unsurprising that the UK government was reluctant to concede much more in the way of capital borrowing powers. The political difficulty of breaching the rule because of significant capital borrowing in Scotland, or even worse, cutting spending in rUK or raising taxes to ensure the rule was still met in such circumstances, would have been significant. The sources of borrowing open to the Scottish Government also probably made a prudential regime less likely. As well as being able to borrow directly from the market, the Scottish Government will also be able to borrow through the UK government's National Loan Fund. This will allow the Scottish Government to borrow at interest rates that are likely lower than it could obtain in the market. But there may have been concerns that without the discipline imposed by the market, the Scottish Government could have been tempted to over-borrow if it were free to set its own borrowing limits (i.e. it may set "imprudential limits").

For resource borrowing, the Scotland Act 2012 limited total borrowing to £500 million with an annual limit of £200 million. Under the 2016 fiscal framework agreement, these limits will be increased to £1.75 billion for total borrowing with an annual limit of £600 million. These increased limits are to allow the Scottish government to deal with fluctuations arising from cash management, from forecast error on tax revenues or welfare benefits, and from "Scotland-specific" economic shocks.

A fairly complex set of rules govern how these powers can be used in these different circumstances.

- There is an annual limit of £500 million on borrowing for in-year cash management (such borrowing allows the Scottish Government to deal with the fact that the timing of its devolved revenues and its spending commitments within a year may differ);
- There is an annual limit of £300 million on borrowing to account for errors in forecasts of devolved taxes or welfare spending;
- There is an annual limit of £600 million on borrowing to address any observed or forecast shortfall in revenues or welfare expenditure where there is, or is forecast to be, a Scotland-specific economic shock. The Fiscal Framework defines such a shock as periods when (on a rolling 4-quarter basis), Scotland's GDP grows (or is forecast to

grow) by less than 1% and is also more than 1 percentage point less than growth in UK GDP growth.

In addition, the Scottish Government will also be able to pay into reserves up to a total of £700 million and draw these down at a rate of up to £300 million a year for resource spending, and £100 million a year for capital spending. While bearing some similarities to a sovereign wealth fund of the type held by resource rich economies, this proposal is limited in scope, given that the value of the fund cannot exceed more than about 0.5% of Scottish GDP. This limitation may reflect a desire on the part of the Treasury to retain control over the management of the UK's assets as well as its debts.

Of course the key question is whether these powers are likely to be enough given the additional fiscal risks the Scottish Government faces. The short answer is it is too early to tell for sure.

There is not really a history of fiscal forecasting in Scotland – Scotland-specific forecasts for the taxes and welfare to be devolved have not been required whilst this revenue and spending has been pooled at the UK level. It is therefore difficult to know how big forecast errors might prove to be and whether £300 million in borrowing is enough to cope with such errors. It will also depend on how quickly the initial BGAs are updated when a shock hits causing revenues in rUK to differ from the forecasts on which those initial BGAs were based.

More broadly, we also do not know how volatile Scottish and rUK revenues may be in future. But we can look at how volatile they have been in the past to get some idea. Indeed it was with reference to the historic volatility and correlation of rUK and Scottish revenues that the UK and Scottish governments negotiated the resource borrowing limits.

The Scottish tax base and revenue volatility

Other things being equal, governments prefer stable sources of revenue. They would prefer that overall tax revenue did not respond to economic shocks, particularly those that have adverse revenue consequences. This requires them to have as wide a tax base as possible so that the risks to tax revenue from shocks are spread across different sources of revenue. And to minimise overall revenue fluctuations, individual tax revenues should not move in the same direction when the economic environment changes.

As an example, consider a government with two taxes that raise £1bn each. When GDP falls, revenue from both taxes is halved: when it rises, revenues increase by 50%. Thus, this government experiences periods when its revenues are £1bn and periods where its revenues are £3bn. In contrast, another government has two taxes that again raise £1 billion each, but when the revenue from one of the taxes falls to £0.5 billion, revenue from the other increases to £1.5 billion and vice versa. Although, in this case tax revenues still fluctuate substantially, total government revenue remains stable at £2 billion. This government will not need to borrow to cover revenue fluctuations because there are no revenue fluctuations, whereas the government in the first example may have to borrow to cover shortfalls when revenues are low.

What does this argument suggest for Scotland's new tax powers? First, its tax revenues are concentrated on a small number of taxes and particularly on income tax. The focus on relatively few taxes implies a greater risk of revenue volatility, other things being equal. Scotland's tax revenues would be more stable had the same amount of revenue been raised from a broader range of taxes. This would have implied less than the (almost) full devolution of income tax revenues which is included in the Scotland Bill.

Second, we can measure how Scotland's sources of tax revenue vary together using measures of correlation. Table 5.1 shows the correlation of tax revenues in Scotland for the four major sources of revenue that are now under the control of the Scottish Government - income tax, VAT, council tax and nondomestic rates. The correlations use real levels of revenue to remove the effects of inflation. They are also de-trended to remove the effects of economic growth, which tend to raise revenues. Hence the correlations presented in the table are intended to capture the cyclical variability in tax revenues around their long term trend. Two further provisos apply to the estimates: first, the time-series on which they are based are relatively short; second this analysis does not take account of the effects of changes in the structure of these taxes during the period 1998-99 and 2014-15.

Table 5.1: Correlations between de-trended real tax revenues in Scotland

	Non-domestic Rates	Council Tax	VAT	Income Tax
Non-domestic Rates	1			
Council Tax	0.6475	1		
VAT	0.2912	0.1369	1	
Income Tax	0.4843	0.9349	0.2203	1

Source: own calculations

Although the correlations are typically positive, none are particularly high, with the exception of that between council tax and income tax. This may be somewhat coincidental as the period of the council tax freeze happened to coincide with the levelling off of income tax revenues during the Great Recession, making for a high correlation between these revenue sources.

The correlation between income tax and VAT revenues, the two main sources of tax revenues under the Scotland Act 2016, is relatively, and perhaps surprisingly, low. However, in the context of reducing the overall variability in Scotland's income tax revenues this is a good outcome.

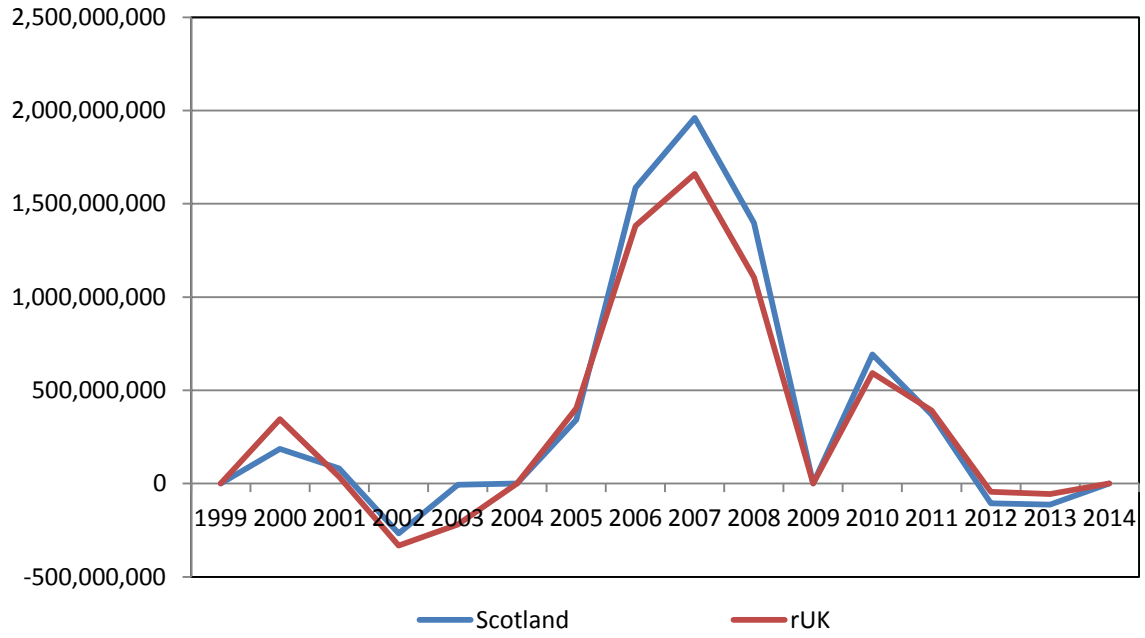
The correlation of Scottish and rUK revenues

In assessing whether Scotland's borrowing and reserves powers are likely to be sufficient for the Scottish Government to deal with forecast temporary shortfalls to its revenues (or increases in its welfare spending) it is important to look not only at the volatility and correlation of Scotland's tax revenues. One must also look at how correlated Scotland's revenues are with those in rUK. This is because it is what happens to rUK revenues that determines Scotland's BGAs. If income tax revenues are forecast to fall at the same rate per capita in rUK as in Scotland, for instance, then the reduction in the income tax BGA – and hence an increase in the block grant –will exactly offset the fall in Scottish revenues, leaving the Scottish budget unaffected. There would be no need to borrow for any budgetary shortfall as none would have arisen.

Thus, the more correlated are Scottish and rUK revenues (and welfare spending), the less need there is for additional borrowing powers. Figure 5.3 shows deviations from trend for the taxes due to be devolved to or assigned to Scotland for both Scotland and rUK for the period 1999-00 and 2014-15.[38] It shows that there is a very strong correlation in these revenue sources.

[38]The trends are calculated for separate 5-year periods: 1999-00 to 2004-05, 2004-05 to 2009-10 and 2009-10 to 2014-05.

Figure 5.3: Deviations of Scottish and rUK revenues from trend (£s)



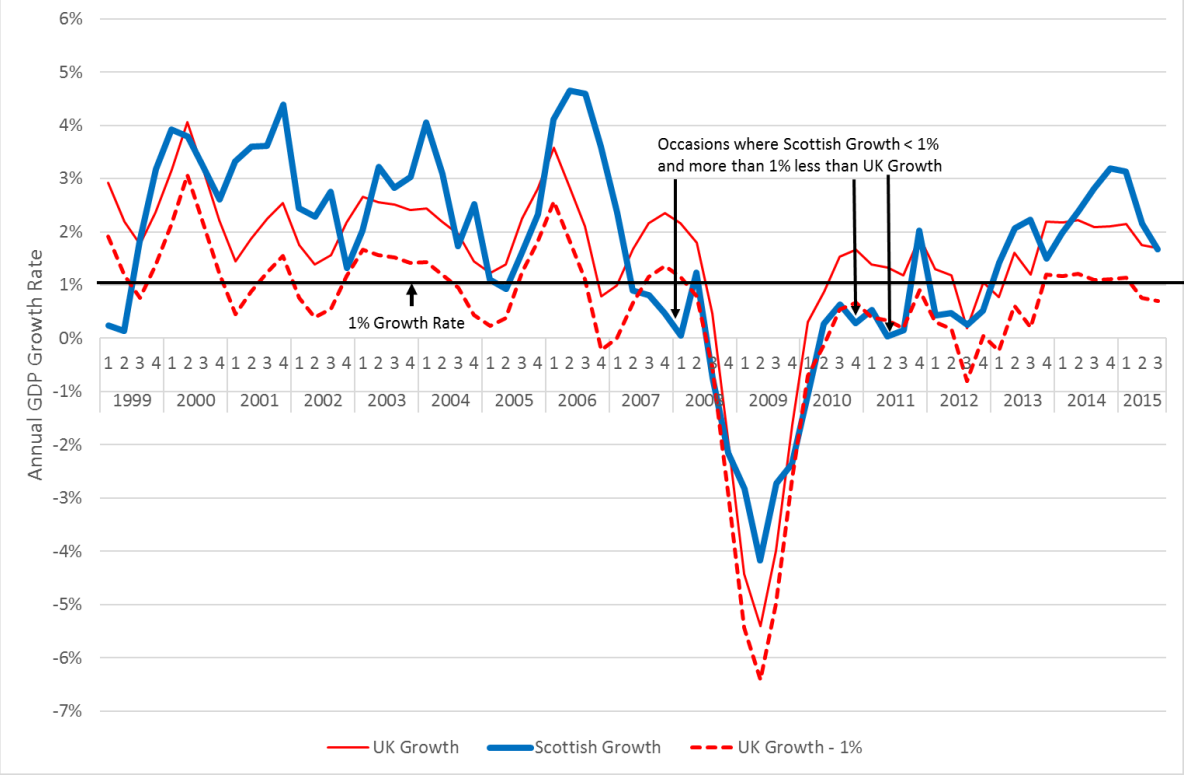
In the recent past then, the BGAs would have insulated the Scottish Government from much of the volatility in its revenues, at least once the BGAs were updated to account for any forecast errors initially built in.

Looking in more detail at the data underlying the graph suggests that in any individual year, differences in the growth in Scottish and rUK revenues would have had an impact on the funding available to the Scottish government via the block grant and its own revenues of £300 million or less. If the past is anything of a guide, this would suggest that a £600 million annual borrowing limit and £1.75 billion total resource borrowing limit should, in principle, be sufficient for the Scottish Government to smooth its budget.

The definition of a Scotland specific shock

The rules defining when these powers can be used to smooth risks associated with a "Scotland-specific economic shock" are complex though. The Fiscal Framework agreement defines such an event as having occurred when "onshore Scottish GDP is below 1% in absolute terms on a rolling four quarter basis and one percentage point below UK GDP over the same period". There is both an absolute and a relative component to this definition: Scottish GDP growth has to be below 1% per annum *and* it has to be more than 1% below UK GDP growth. Historically, this has been a relatively rare occurrence. Figure 5.4 shows the annualised growth rate for UK and Scottish GDP for the period 1999 to 2015. It also includes a line which tracks the UK growth rate *less* 1%, which forms part of the trigger mechanism.

Figure 5.4. Scottish and UK GDP growth



Source: ONS and Scottish Government

It is clear from figure 5.4 that occasions when Scotland's growth rate was more than 1% below the UK as a whole *and* less than 1% in absolute value were relatively rare. Specifically, this occurred between 2007Q2 and 2008Q1, in 2010Q4 and in 2011Q2. For the rest of the period, Scotland's growth rate was above 1% or less than 1% below the UK growth rate. Therefore, ex-post, other than in these 5 quarters, additional resource borrowing would not have been available to the Scottish government. If the past turns out to be a reasonably good predictor of the future, then this mechanism is unlikely to be frequently available to the Scottish government. This would be a constraint on its actions if the BGA increased significantly relatively to Scotland's tax revenues during periods when the conditions for a "Scotland-specific shock" were not met: in that case, borrowing would only be possible if any shortfall in revenues was not forecast, and would be capped at £300 million a year.

5.3 Summary

That part of the Fiscal Framework Agreement which provides for the Scottish Fiscal Commission to generate the macroeconomic forecasts on which the Scottish government's budget will be based is to be welcomed, since it further distances the forecasting procedure from government influence.

The agreement also provides for joint working of the OBR and the Scottish fiscal commission. It is important that these two bodies work together efficiently and effectively.

The set of taxes that will be transferred as a result of the Scotland Bill provide a relatively narrow tax base. Nevertheless, once allowances are made for inflation and common trends, their short run covariance appears to be modest. This is a positive outcome in the sense that high covariances would imply greater systemic risk to Scotland's total tax revenues.

Similarly, the fact that rUK and Scottish revenues for the taxes to be devolved are so strongly correlated means that the BGAs do much of the work of insulating the Scottish Government's budget from the impact of economic shocks. It is for shocks that affect Scotland's devolved revenues and welfare spending differently than equivalent revenues and spending in rUK that the Scottish Government's borrowing and reserves powers will be most useful in managing. If the past is anything to go by, the scale of these borrowing powers looks appropriate to the fiscal risks the Scottish Government will face.

But two things are worth noting. First is that the rules about when the Scottish Government can borrow to address forecast temporary shortfalls in revenues (or increases in welfare spending) are quite restrictive. It is not only when Scottish GDP growth is below 1% and more than 1 percentage point below UK GDP growth that such shortfalls may materialise. The Scottish Government will be able to draw down its reserves in such circumstances, but it will not be able to use its borrowing powers.

Second is that the borrowing limits are fixed in cash terms. This means that while the amount the Scottish Government can borrow is sufficient in the short term, it may not be as the amount of "cash at risk" increases as inflation and economic growth increase the nominal amount of devolved revenues and welfare spending. There is, therefore a case to be made that the borrowing limits should be indexed to the growth in devolved revenues and welfare spending. They should also be reassessed on a periodic basis in case the historic strong correlation of revenues and welfare spend in Scotland and rUK weakens in future.

6. Policy change and no detriment

The Smith Commission Agreement stated that there should be 'no detriment as a result of UK Government or Scottish Government policy decisions post-devolution'.

The Smith Commission identified two sub-elements of this principle:

- Where either the UK or Scottish Governments makes policy decisions that affect the tax receipts or expenditure of the other, the decision-making government will either reimburse the other if there is an additional cost, or receive a transfer from the other if there is a saving. This is the *compensation principle*.
- Changes to taxes in the rest of the UK, for which responsibility in Scotland has been devolved, should only affect public spending in rUK. Changes to devolved taxes in Scotland should only affect public spending in Scotland. This is the *taxpayer fairness principle*.

In this section we consider the extent to which these two elements of no detriment from policy decisions are likely to be achieved by the Fiscal Framework Agreement.

6.1 Tax rate changes in rUK (taxpayer fairness principle)

The principle that tax rate changes in rUK, for taxes that have been devolved to Scotland, should not affect spending in Scotland, seems a logical and straightforward one. Its implementation is complicated by the Barnett Formula. The Barnett Formula provides Scotland with a population share of spending increases in rUK. But if these spending increases come about as a result of tax rate increases in rUK, which are not matched by equivalent tax rate increases in Scotland, few would agree that this was fair[39].

The mechanisms for adjusting Scotland's block grant each deal with this issue to an extent – increases in rUK income tax revenues resulting from increases in rUK tax rates result in increases to the size of the BGA, mitigating the extent to which rUK tax increases feed through to increases in the Scottish block grant. As we pointed out earlier (and in our earlier reports) not all of the BGA mechanisms fully account for the effects of rUK tax revenue increases on the Scottish block grant, and thus not all approaches meet the 'taxpayer fairness' principle.

As noted in Section 3, the UK Government was initially in favour of using the Levels Deduction (LD) method for indexing Scotland's BGA for tax, because the LD method is the only method that fully achieves the taxpayer fairness principle. The LD approach meets the taxpayer fairness principle because it is symmetric with the Barnett Formula. The Barnett Formula provides Scotland with a population share of comparable spending increases in rUK. The LD method increases Scotland's BGA (i.e. the bit taken away from the block grant) by a population share of rUK tax revenue increases. Thus the effect of the LD method is to deduct from the increase to Scotland's block grant that part of the increase that is due to higher levels of tax paid by rUK taxpayers.

An explicit tax rate increase in rUK, which increases tax revenues, is analytically the same as an increase in rUK revenues resulting from general revenue growth. If a tax rate increase in rUK raises

[39] If tax rate increases in rUK are used to fund increases in spending on 'reserved' functions, this would also be seen as unfair if not matched by Scottish tax rate increases, and Scottish taxpayers would benefit from the increased reserved spending.

an additional £10bn in revenue, and that additional revenue is spent on 'comparable' services, the Scottish block grant would increase by a population share of the rUK spending increase, whilst the BGA would increase by a population share of the rUK tax increase. These two would be equal and thus cancel out.

When Scottish revenues per capita are lower than those in rUK, neither the CM method nor the IPC method would achieve the taxpayer fairness principle, as both account for Scotland's lower per capita revenues. In the example explained above, Scotland would receive a population share of rUK spending increases, but its BGA would go up by less than a population share of the equal rUK revenue increases and the CM method. Similarly, when Scotland's BGA is based on the IPC method, the percentage-based increase in the BGA will be less in cash terms than a population-share of the spending increase.

Of course it should be noted that, should rUK revenues fall, the 'unfairness' inherent in the Comparable Model and IPC Method falls on Scottish taxpayers. Via the Barnett Formula, Scotland's block grant would receive a population share of any cut in comparable spending in rUK, but the BGA (i.e. the bit deducted from the grant) would fall by less than a population share.

6.2 No detriment and compensation for policy spillovers

The second element of no detriment from policy change relates to the potentially more nebulous issue of policy spillovers.

Our previous report pointed out that, for any given policy change made by either the UK or Scottish Government, there could potentially be a wide number of spillover effects on the budget of the other government. For example, an increase in Scottish income tax rates might increase eligibility for Universal Credit, a reserved benefit, given that eligibility is based on after-tax income. But it might also induce behavioural effects: some Scottish taxpayers might work less, reducing rates of National Insurance Contributions paid in Scotland; others might relocate to rUK, or convert earned income to dividend income, either of which would benefit the UK Government budget. Identifying the size of such effects could be problematic, given that no counterfactual scenario can ever be observed.

The Fiscal Framework Agreement states that the 'direct' spillover effects of policy change will be subject to compensatory transfers. Direct effects are those which come about directly and mechanically as a result of policy change. In the example given above, the impact of the increase of Scottish income tax rates on eligibility for Universal Credit would count as a direct effect – the Scottish Government would be obliged to pay a compensating transfer to the UK to account for this.

The Fiscal Framework Agreement states that financial spillover effects resulting from behavioural change, or any indirect or second round effects, will not in general be subject to compensatory transfers. However, in exceptional circumstances, behavioural effects that involve a 'material and demonstrable' welfare cost or saving will be taken into account, and subject to compensatory transfers. Any decision as to whether it is appropriate to take into account a behavioural spillover must be made jointly by the two governments.

The Agreement provides no indication as to what level of financial spillover effect might be considered 'material', so this will be entirely a matter for each Government to decide on a case-by-case basis. This could open the door to dispute between the Scottish and UK governments.

Assessment of causality and of the scale of financial impacts of policy decisions will be based on a 'shared understanding' of the evidence. Of course, this leaves open the question of how this shared understanding will be arrived at. Presumably both governments will undertake their own analysis of the fiscal impacts of any behavioural effect, and negotiate as to the scale of effect when their respective analyses disagree (the Agreement does not seem to predicate any arrangement for the Scottish Fiscal Commission in such issues).

Economists find causal impacts extremely difficult to calibrate: effects have to be measured in the real world, where many other factors are at play, and not in the controlled environment of a laboratory. Estimates are likely to be subject to significant uncertainty, and there is no third party to adjudicate disputes over such evidence.

Consider the example of changes to the Additional Rate of income tax. Some Scottish politicians have indicated that they would be keen to raise it above 45% in Scotland, whilst George Osborne has hinted at a possible reduction in rUK. Evidence suggests that the incomes of additional rate taxpayers can be very sensitive to changes in the rates of tax that they pay (although employment income tends to be less sensitive to tax changes than savings and dividend income, which is not being devolved). In the face of tax increases, additional rate taxpayers may work less or engage greater effort in tax avoidance. Higher rates of tax may also discourage in-migration from high-skilled workers.

So an increase in additional rate tax to 50p in Scotland could result in several types of behavioural response:

- There may be a reduction in the incomes of Scottish additional rate taxpayers. This would result in a reduction in National Insurance Contributions made by these taxpayers to HMRC. Would the UK Government want the Scottish Government to compensate it for this effect?
- Some additional rate taxpayers in Scotland may be able to re-classify some of their income from earned income (for which tax liabilities are due to the Scottish Government) to dividend income (which is payable to the UK Government). Thus this behavioural effect would benefit the UK Government – would the Scottish Government want the UK Government to compensate it for this effect?
- Some additional rate taxpayers might relocate from Scotland to rUK (or put off a relocation from rUK to Scotland). Again, would the Scottish Government want the UK Government to compensate it for this effect?

Each of these effects could be 'material' but would be subject to a great deal of uncertainty as to their magnitude. HMRC places wide confidence intervals around its estimates of the revenue effects of changes in top tax rates and the debate about the size and nature of behavioural responses of top rate taxpayers are also somewhat politically charged. Thus, while the Framework is pragmatic in attempting to restrict the incorporation of behavioural spillover effects into calculations of compensatory transfers to those occasions where such effects are likely to be large, those occasions are often also those where there is most uncertainty and most scope for rancour.

7. Comparing Scotland's evolving funding system with that in other countries

In this Section we compare key features of Scotland's evolving system of grant-funding with those for sub-national governments in a number of other countries. In particular, we focus on: the role and nature of any revenue and needs equalisation; insurance against idiosyncratic shocks that affect the revenues of a given sub-national area to a greater or lesser extent than the rest of the country; and insurance against common shocks that affect a country as a whole. We draw on comparative studies produced by the OECD and IMF, as well as a number of country-specific studies. The picture that emerges from this analysis is of a system for Scotland that differs systematically from that of the other countries we examine.[40]

7.1 The role of grant funding

Devolved or sub-central governments virtually always rely on fiscal transfers – i.e. grants – from central government to finance part of their spending. This is because it often makes sense to implement tax policy at national level, but to enable spending priorities to be determined at a sub-national level. As a result, sub-central governments (SCGs) rely on grants from central government to correct this gap between their revenue responsibilities and their spending responsibilities.

But as well as simply filling this gap, grants from central government to SCG tend to serve a number of other purposes.

- Firstly, grants are often designed to achieve some level of fiscal equalisation. Fiscal equalisation is the 'transfer of financial resources to a SCG to enable them to provide their citizens with a similar level of public services at similar levels of taxation' (OECD, 2013)[41]. Fiscal equalisation can be designed to equalise disparities in tax capacity or disparities in spending needs, or both.
- Secondly, grants can also aim to insure a SCG against macro-economic shocks. This function can include stabilisation against common shocks, and insurance against idiosyncratic shocks affecting individual SCGs (risk sharing).

What is the difference between these two purposes? Equalisation aims to reduce inter-jurisdictional disparities in fiscal capacity at a given point in time. It can be thought of as a transfer of funds from richer to poorer regions that help compensate for the poorer regions' lower levels of revenues or higher levels of spending need. Thus it helps reduce the variations in service provision resulting from either different spending needs or different tax capacity in different parts of a country. In contrast, grants to insure SCG against macro-economic shocks aim to provide temporary

[40] The Section does not look at the specific tax and spending powers devolved to sub-national governments in other countries. A basic overview of the extent to which sub-national governments have powers over taxes can be found in Blochliger and Nettley (2015), 'Sub-central Tax Autonomy', OECD Working Papers on Fiscal Federalism. More detailed information on sub-national powers over income tax in a smaller range of countries can be found in Almendral and Vaillancourt (2013), 'Autonomy in Subnational Income Taxes: evolving powers, existing practises in seven countries', McGill-Queen's University Press.

[41] OECD (2013) Fiscal federalism 2014: making federalism work. OECD, Paris. http://www.oecd.org/ctp/federalism/fiscal-federalism-making-decentralisation-work.htm.

transfers to smooth cyclical fluctuations in budgets over time, whether these fluctuations are due to common shocks or idiosyncratic shocks. The objective of equalisation is similar to the objective of insurance against idiosyncratic shocks – but whereas equalisation tends to relate to fairly permanent differences in fiscal capacity, insurance against idiosyncratic shocks aims to correct more temporary fluctuations in SCG budgets. In practice of course, the distinction between permanent differences in fiscal capacity and temporary fluctuations in fiscal capacity is not so easy to discern.

In practice, transfers from central to sub-central government tend not to be labelled explicitly as serving one type of purpose rather than another. Instead, they tend to be designed to achieve several purposes simultaneously, and their effectiveness in doing so requires a degree of ex-post analysis.

In this section we consider how grants are allocated to SCG in other decentralised countries, and consider how the determination of Scotland's block grant, as outlined in the Fiscal Framework Agreement, compares to arrangements in other countries.

7.2 Equalisation and insurance in Scotland and other countries

Fiscal equalisation

Fiscal equalisation can be made on the basis of revenues and/or spending needs.

Revenue equalisation

Virtually all federal countries undertake some element of revenue equalisation (i.e. grants which compensate SCGs with a weaker tax base, so that differences in the resources each SCG has per capita are reduced). Revenue equalisation grants are normally calculated on the basis of a measure of average tax capacity. Tax capacity is the *per capita* tax revenue that a SCG would raise if it applied a *standard tax rate* to its tax base.

Most countries see some element of revenue equalisation as a necessary part of decentralisation, ensuring that disparities in the resources available to different SCGs are mitigated to an extent. The big question is how to balance equalisation against other objectives of decentralisation. Excessive equalisation can create significant moral hazard problems. Equalisation can erode the incentives for SCGs to grow their tax base (revenue equalisation effectively taxes SCGs' revenue growth); it can create an expectation of bailout; and it can incentivise the 'gaming' of grant allocation procedures.

But countries differ significantly in the extent to which they equalise tax capacity of SNGs. Marginal equalisation rates measure the rate at which a jurisdiction's own revenue is taxed away or cancelled out in the form of lower grant. Several countries use asymmetric equalisation rules; in other words, the revenues of a SCG that has below average tax capacity are 'topped-up' at a higher marginal rate than the rate at which the revenues of a SCG with higher than average tax capacity are 'taxed away'.

In Germany any Länder with a tax capacity less than 99.5% of the average has over three quarters of its shortfall corrected. The extent of equalisation implies that every additional euro collected by a state on its own leads to a reduction of receipts from transfers by an almost equal amount, providing little incentive for Länder to generate additional revenue from economic growth or

tackling tax fraud (Feld, 2011[42]; Buettner 2008[43]). Austria has an assymetric revenue equalisation mechanism; Lander with tax capacity below average have the majority of their shortfall addressed, whereas those with above average tax capacity do not have their tax capacity equalised at all.

Under a new financing system introduced in 2009, Spain's 15 Autonomous Communities (ACs) are allocated 50% of revenue from state income tax (plus significant shares of various other taxes). Grants are allocated to the ACs on the basis of an estimate of their fiscal capacity. Essentially, the Guarantee Fund equalises 75% of the ACs tax capacity for devolved taxes. The remaining 25% of AC tax revenues are not equalised; thus the amount of resources received by each AC from this element is directly related to its fiscal capacity (Bosch, 2009).[44]

Most countries use fairly formal rules to calculate the degree of revenue equalisation, but that does not mean that the process is without disagreement between different SCGs. In Canada for example, the number of taxes included in the calculation of provinces' fiscal capacity has varied from three to 33. There has been debate over which provinces to include in the calculation of 'average' tax capacity, given some provinces' heavy reliance on revenues from natural resource taxation. In the US, revenue equalisation tends to take place on a more ad hoc basis (although even in countries with more formal rules on equalisation, the grant allocation process has a strong political element to it).

Under Scotland's pre-2012 devolution arrangements, the Scottish budget did bear the full risk of its devolved revenues (council tax and business rates) growing at a slower rate than those of rUK; equally it gained if its revenues from those taxes grew more strongly. However, in the context of these taxes forming only a small part of the Scottish budget, and with all other revenues from tax raised in Scotland being pooled at UK level and redistributed to Scotland through the relatively generous Barnett Formula, these risks were not seen to be an issue.

With a much greater range of revenues now being devolved, the issue of equalisation becomes more important. Scotland's emerging Fiscal Framework looks a little unusual in the context of international experience. The fact that Scotland's block grant adjustment (BGA) in the year that revenue responsibilities are devolved will be determined by the actual revenues raised from those taxes in Scotland implies that there is effectively 'full equalisation' of Scotland's lower tax capacity at the point of devolution. Indeed, this is the principle of 'no detriment from devolution' that was established by the Smith Commission.

In future years however, changes in relative tax capacity for the devolved taxes are fully borne by the Scottish Government: this is the principle of 'economic responsibility'. For instance, if tax capacity in rUK increased by 5%, then Scotland's BGA will increase by 5% irrespective of what happens to devolved Scottish revenues. Thus, if Scotland's tax capacity were unchanged, the Scottish Government's budget would fall by an amount equal to the increase in the BGA. With devolved revenues and grant funding each accounting for about half of the Scottish Government's total revenues, its overall budget would fall by about 2.5% under such a scenario.

[42] Feld L. (2011) Written evidence to the Scottish Parliament. http://archive.scottish.parliament.uk/s3/committees/scotBill/documents/49.SBProfessorLarsPFeld.pdf.
[43] Buettner T. (2008) Fiscal equalisation in Germany, in N. BOSCH and J. DURAN (Eds) *Fiscal federalism and political decentralisation: lessons from Germany, Spain and Canada*, pp. 137-147. Edward Elgar, Cheltenham.
[44] Bosch N. (2009) The reform of regional government finances in Spain, in INSTITUT D'ECONOMIA DE BARCELONA (Ed)*World report on fiscal federalism*, pp. 58. Institut d'Economia de Barcelona, Barcelona.

Spending needs equalisation

Whilst revenue equalisation is very common in other countries, equalisation of spending needs is less so. In part this reflects the fact that measurement of spending needs is more complex and contentious than measurement of tax capacity. In part it may also reflect the fact that, in many countries, spending needs do not vary as much as tax capacity.

Nonetheless, assessment of spending needs does take place in a large number of federal countries. It may come as a surprise for example that grants to Swiss Cantons are based in part on a basket of four geographic and six socio-economic indicators designed to assess spending need (OECD, 2013)[45].

The way in which spending needs are assessed varies significantly from one country to another. The Australian Government allocates grant to States using a detailed, empirically-based approach to assessing States' spending need across 14 categories of spending. Critics point to its complexity – its latest methodological report runs to 700 pages (Commonwealth Grants Commission, 2010).[46] At the other end of the spectrum, Spain now uses a very simple equalisation formula to assess the spending needs of its Autonomous Communities (ACs), the aim being to enable ACs to provide similar levels of essential welfare state services while making a similar fiscal effort (Bosch, 2009). The formula is transparent, containing some seven variables (relating to demographics and geography), but has little theoretical or empirical underpinning – its simplicity reflects the set of parameters that Spain's 17 ACs were able to agree on.

However, not all federal countries allocate grant to SCG on the basis of spending need. Canada and Germany, for example, while using grants to offset different tax revenues in the provinces and Länder, largely ignore their spending needs.[47] Canada has repeatedly rejected the idea that grant should be allocated to provinces based on spending need, as this is seen to threaten provincial autonomy (Lecours and Belland, 2010).[48]

One of the reasons why measurement of spending needs is so contentious in decentralised systems is that spending needs can only be assessed empirically relative to some standard policy. This standard policy can be set by the national government, but in cases where SCGs have substantial policy autonomy, the setting of particular policy standards by the central government might be seen as counter to the spirit of devolution. Alternatively, the standard may be set in relation to some 'average' policy across SCGs. This creates its own methodological challenges.

Scotland's Barnett-determined block grant makes no explicit consideration of Scotland's relative spending need. It allocates to Scotland each year a population share of the change in 'comparable' spending in England, and adds this increment to Scotland's block grant from the previous year.

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[45] OECD (2013) *Fiscal federalism 2014: making federalism work.* OECD, Paris. http://www.oecd.org/ctp/federalism/fiscal-federalism-making-decentralisation-work.htm

[46] Commonwealth Grants Commission (2010), *Report of GST revenue sharing relativities - 2010 review.* Commonwealth of Australia, Canberra.

[47] The German system makes only a very limited attempt to equalise the Länders' spending needs. Special purpose grants are allocated to Länder with a population below 4 million) in recognition of the economies of scale in public service provision that larger Länder can achieve; and some additional grants are allocated to Länder of the former East Germany to support the reconstruction process, although these are being phased out (BUETTNER, 2008).

[48] Lecours A. and Béland D. (2010) Federalism and fiscal policy: The politics of equalization in Canada*, Publius: The Journal of Federalism* **40**, 569-96.

The fact that Scotland's existing grant mechanism does not take spending needs into account is not in itself particularly unusual in an international context. But what is unusual about the way that Scotland's block grant is determined is the fact that the level of grant is largely arbitrary, based on a combination of history and the flawed way in which population growth is accounted for.

Scotland's Barnett-determined block grant provides Scotland with a level of grant that is much higher in per capita terms than is spent on 'comparable' functions in England. In theory, operation of the Barnett Formula should lead to convergence in spending per capita between Scotland and England over time (because each year, Scotland gets a population share of English spending increases, so the effect of Scotland's initial spending advantage should become less over time). But the rate of convergence is reduced (and can even reverse) if population growth in Scotland is slower than in England (strictly speaking, as shown in Appendix 1, with slower population growth Scotland's per capita spending converges to a higher level than England's).

Insurance against macro-economic shocks

Grants to SCG may also be designed to provide insurance against macro-economic shocks. Macro-economic shocks can include 'common' shocks which affect all territories within a country equally; or idiosyncratic shocks which affect one territory more than others.

Insurance against idiosyncratic shocks can be thought of as a more specific form of fiscal equalisation, equalising temporary deviations from trend rather than equalising more permanent differences in tax capacity or spending need. It is thus difficult to disentangle the effects of a given grant system to assess the extent to which it equalises permanent differences in tax capacity as opposed to temporary, asymmetric shocks. In practice, asymmetric shocks to specific regions tend to be dealt with through the sharing of federal level income tax and welfare policies, rather than through inter-jurisdictional grants (which are often calculated on the basis of tax capacity over a long period, or with a lag).

Poghosyan et al. (2015)[49] for example argue that in the US, Canada and Australia, fiscal transfers to SCG play a relatively minor role in offsetting idiosyncratic shocks. This finding is perhaps not surprising for the US, which has no explicit equalisation objective in allocating grants to states. It is perhaps more surprising for Canada and Australia, which both have explicit equalisation objectives contained within their constitutions, (although the finding in relation to idiosyncratic shocks may be driven by the fact that provinces/ states in Canada and Australia have relatively synchronised business cycles).

Scotland's new Fiscal Framework makes no allowance for asymmetric shocks that hit Scottish devolved revenues per capita more than the equivalent UK revenues, regardless of whether these shocks are temporary, or become more permanent. However, some insurance against idiosyncratic shocks will provided by the fact that revenues from many taxes raised in Scotland continue to be pooled by the UK Government and allocated through the Barnett Formula or the still predominantly UK-wide welfare system.

What about 'common' macro-economic shocks? The OECD (2013) argues that many grant systems are not particularly effective at mitigating common shocks, tending to be pro rather than counter cyclical. In this context, Scotland's fiscal framework can perhaps be seen rather positively. The fact

[49] Poghosyan, T., Senhadij, A., and Cottarelli, C. (2014) The role of fiscal transfers in smoothing economic shocks. In Cottarelli, C. and Guerguil, M. (Eds) Designing a European Fiscal Union, Routledge.

that the Block Grant Adjustment relates to revenues (and welfare spending) in rUK means that the Scottish block grant is protected from UK-wide cyclical fluctuations in a way that the budgets of SCGs in other countries are often not.

7.3 Summary

The design of Scotland's grant system is somewhat unusual in an international context. The Barnett-determined block grant effectively takes no account of Scotland's relative spending needs. While the absence of a detailed spending needs assessment is not particularly unusual for SCGs that have substantial policy autonomy, what is unusual with the Barnett Formula is the arbitrary levels of funding per capita it generates when population growth differs between Scotland and England (and rUK).

Whilst many decentralised countries do not equalise the spending needs of SCG when allocating grants to them, virtually all attempt to equalise tax capacity to some extent. The extent to which variations in tax capacity are equalised varies significantly across countries. In some (Germany, Australia, Sweden for example), equalisation is almost complete and disparities are virtually eliminated. In others (Canada for example), equalisation is much more partial.

Scotland's Fiscal Framework adopts a somewhat unusual approach. Existing differences in tax capacity (at the point of devolution) are fully equalised away, by deducting from Scotland's block grant the revenues actually raised in the first year of devolution. But in future years, the Scottish budget will bear the full consequences of differential revenue growth. A Scotland-specific economic shock, which reduces Scotland's revenues, will not be compensated for in any way. The flip-side of spending risk is of course reward: Scotland is fully incentivised to grow its tax base, as it benefits in full from increases in tax capacity.

Of course the degree of equalisation is only one of the factors which influence the extent to which a SCG budget is protected from asymmetric shocks. The other important factor is the extent to which the SCG relies on devolved revenues to finance own-expenditure. In the past, devolved revenues (council tax and NDR) accounted for around 9% of the Scottish Government's revenues, with the remainder coming from a block grant financed from pooled UK revenues. Thus the fact that Scotland's tax capacity was not equalised in any way through the grant system was not seen as important (the Barnett Formula itself has provided the Scottish Government with a more generous grant than it would receive if the grant was designed purely to equalise tax capacity, so the lack of equalisation has not been seen as an issue).

With devolved and assigned revenues in future accounting for 48% of the Scottish budget, Scotland will be more exposed to fluctuations in its revenues (and income taxes are much more prone to fluctuation than taxes on property). Thus some element of revenue equalisation to insure against temporary or permanent idiosyncratic shocks might have been prudent.

Scotland's Fiscal Framework does offer Scotland relatively strong protection against macro-economic shocks that affect the whole of the UK. This is perhaps the key strength of Scotland's evolving grant allocation system relative to other countries.

The degree to which tax capacity and spending needs are equalised in the grant allocation process is ultimately a political question. In practice, the extent to which a country engages in fiscal equalisation reflects the type of federation it is. Countries that operate a form of competitive

federalism (most extremely the US, but also Switzerland and Canada) tend to have little or no spending needs equalisation, and only partial revenue equalisation. In these countries, SCGs tend to have high levels of autonomy, and tax competition is viewed positively. In more cooperative type federations (Germany and Australia for example), the central government has a much stronger role in establishing standards and ensuring that SCGs can deliver equivalent public services for a given level of tax effort.

The UK arrangements look increasingly unusual, with grant to Scotland based on a combination of historical accident, virtually full insurance against macro-economic shocks, and virtually no insurance for future economic shocks or trends that affect Scotland's devolved revenues and welfare more than they do equivalent spending in rUK.

8. Conclusions

The Smith Commission set out a series of recommendations to give the Scottish Government new tax and welfare powers and make it more fiscally accountable for the effects of its policy decisions. As it recognised, successful devolution of new fiscal responsibilities was always going to be dependent on the development of an appropriate Fiscal Framework.

There were protracted negotiations on the Fiscal Framework. Failure to find agreement would have jeopardised the parliamentary progress of the Scotland Act. The main stumbling block was how to adjust Scotland's block grant following the introduction of its new tax and welfare powers.

Disagreement over the block grant adjustment was almost inevitable. The Smith Commission set out some principles for its design. But these were mutually incompatible. Compromise on one or more of these principles was necessary to find a solution. The protracted negotiations were the result of the search for this compromise.

In the end, the final agreement gives the Scottish Government what it wanted in relation to the block grant adjustments (BGAs), at least for the next few years: the Fiscal Framework commits to the use of the Indexed Per Capita approach for the five years to 2021–22. This approach protects the Scottish budget from the risk that Scotland's population grows more slowly than that of rUK. It satisfies the Scottish Government's interpretation of the 'no detriment' principles. But the Scottish Government did have to compromise in other areas – the Fiscal Framework provides less borrowing capacity than the Scottish Government wanted, and it has been forced to accept that Scottish fiscal forecasts will be made by the independent Scottish Fiscal Commission rather than by its own economists.

Why were the two governments able to finally agree, having been at loggerheads for months? One possibility is that the UK Government effectively threw in the towel – it realised that, over the next few years, while the sums involved mattered a lot to Scotland, they were relatively small for the rest of the UK, and that lack of an Agreement could distract from other, perhaps more pressing issues, like the EU referendum. Another possibility is that the UK Government was actually more concerned about the borrowing issue all along: it adopted its tough initial position on the BGA in order to give it greater negotiating leverage over borrowing.

So what next?

Although agreement has been reached on the principles of the Framework, there remain a number of important issues to be resolved. A large number of administrative issues must be addressed before welfare devolution can take place; and the approach to measuring the Scottish share of VAT revenues remains to be developed.

The Fiscal agreement will be independently reviewed in 2021. Based on the outcomes of the review, a new round of negotiations will take place on the future determination of the BGA. But it is difficult to predict the form and direction that those negotiations might take since the Fiscal Framework Agreement does not specify how the review process will be structured and what status it will have. If Scottish devolved revenues per capita consistently outperform those in rUK, (which is what happened during the 2000s, for instance), then this may stoke resentment among rUK

taxpayers and provide impetus for an alternative adjustment mechanism. But it is just as possible that Scottish revenues per capita perform relatively badly over the next five years, which might lead to pressure to encompass a greater degree of revenue equalisation in future BGA indexation mechanisms.

Another factor that will be material to the success of the Fiscal Framework in coming years is the extent to which Scottish and rUK tax policies diverge. Policy divergence would provide additional justification for tax devolution in the first place. But it may also place additional strains on inter-governmental negotiation via the 'taxpayer fairness' and 'compensation' principles. Such strains will be enhanced if policy decisions lead to significant and demonstrable changes in behaviour that have revenue or spending consequences in the other jurisdiction. The Fiscal Framework downplays the importance of compensatory transfers in response to policy change. But there is likely to be scope for raising grievance should either government decide it is in their fiscal or political interest to do so.

Does it have to be like this?

The Fiscal Framework Agreement, like the Smith Commission before it, continues a longstanding tradition in the UK of determining important constitutional issues in an ad hoc manner. Rather than taking a first-principles view of how devolved and local government fit within the overall fiscal structure, new features are tacked on to an existing system that is widely regarded as unsatisfactory. To what extent should fiscal risks be shared across the UK? How far should funding be based on spending needs, revenue capacity or revenue contributions? What is the fiscal role of the Union? Without a proper consideration of these questions, negotiations over issues like the BGA are little more than zero-sum games: central and sub-national governments vie to capture resources within a framework that lacks legal foundation or a clear set of principles.

This might explain what has been something of an irony during the Fiscal Framework negotiations. With its focus on the 'no detriment' principle, it has been the Scottish Government which has argued most strongly for an approach which ensures the ongoing pooling and redistribution of some proportion of 'devolved' revenues across the UK; while the UK government, at least initially, argued that a devolved tax should not be subject to pooling and sharing around the UK. That is the same Scottish Government that wishes Scotland to move towards 'full fiscal autonomy' – which involves the ending of all such pooling – and the same UK government which has emphasised the importance of the Union as an institution of risk-sharing and solidarity.

Appendix 1: the Barnett formula and 'Barnett squeeze'

The block grants to the Scottish and other devolved governments are updated each year using the Barnett Formula. Under this formula, the change to a devolved government's grant in a given year is the country's population share of changes in (planned) spending on 'comparable' (i.e. devolved) services in England in the same year.

Cash change in spending by UK Govt Department	×	Comparability percentage	×	Appropriate population proportion

For example, if the UK government announces a £100m increase in Department of Health spending, if 99% of that department's budget is spending in England on responsibilities that are devolved to Scotland, and if Scotland's population is 10% of England's, then the Scottish Government's budget would increase by £9.9 million. Any Barnett-calculated change is added to or subtracted from the existing grant (the 'baseline').

If the rate of population growth in a devolved country was the same as in England, the Barnett formula implies convergence to the same level of spending per person as in England when spending is increasing in nominal terms (and divergence from this level when spending is being reduced). This is because the Barnett Formula gives the same cash-terms increase in spending per person to devolved governments as in England, which will be smaller in percentage terms if spending in the devolved country starts off higher, and vice versa. The effect of the different initial spending level (the baseline) therefore becomes proportionately less over time. This convergence is faster the faster the rate of spending growth.

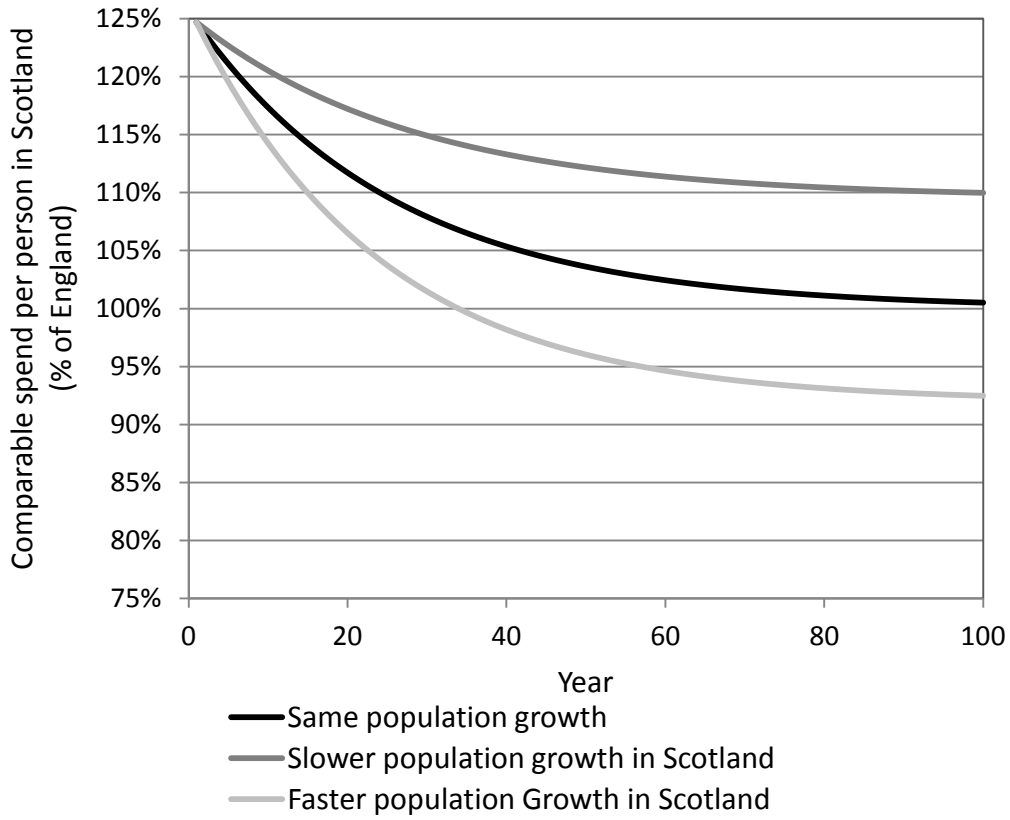
Thus for Wales, Scotland and Northern Ireland, where spending per person is higher than in England, if population grew at the same rate as in England, then the Barnett Formula would lead to spending converging down to the level in England: a process known as the 'Barnett Squeeze'. The black line in Figure A.1 illustrates this.

However, when population growth differs between England and a devolved country, this process of convergence is different and the Barnett Squeeze may not happen. To see this, imagine that population increases in England but not in Scotland. If the UK government keeps spending on comparable services in England fixed in per capita terms, there will necessarily be an increase in aggregate spending in comparable services in England. The Barnett formula means this feeds through to increased grant for Scotland, despite the fact that Scotland's population is unchanged. This causes spending to rise in Scotland relative to England.

Scotland's population growth has indeed been slower than that in England since devolution (and indeed, since long before): growth has averaged 0.35% per year compared to 0.7% a year in

England.[50] The dark grey line in Figure 1 illustrates that this slows the Barnett Squeeze, and means that spending in Scotland converges to a level higher than 100% of that in England (the precise level depends on how different population growth is, and how quickly spending is growing).[51] In contrast, the pale grey line shows what happens when this pattern of relative population growth is reversed. In that case the Barnett squeeze happens more quickly, and in fact, relative spending in Scotland would converge to a level below 100% of that in England.

Figure A.1. The impact of differential population growth on the 'Barnett Squeeze'



Note: Assumes comparable spending growth of 4% per year.
Source: Authors' calculations.

[50] This is one of the reasons why the convergence between spending per person in Scotland and England that the Barnett Formula is often said to result in has not actually happened to any significant extent. Phillips (2014a) discusses an additional reason related to flaws in the way the Barnett Formula has treated non domestic rates revenues.

[51] This feature of the Barnett Formula is discussed in more detail in Cuthbert, J. (2001), The Effects of Relative Population Growth on the Barnett Squeeze, Fraser of Allander Institute Quarterly Economic Commentary, Vol. 26, No. 2 (http://www.cuthbert1.pwp.blueyonder.co.uk/papers%201/Barnett%20Rel%20Pop%20Note%2016%2012%2000.doc).