Reflections on a post-independence fiscal landscape, including the potential for the development of a Savings Fund

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Executive Summary

• The large rise in importance of North Sea oil and gas to the Scottish economy and, especially, to Scottish public finances is one of the few, known, major differences that would stem from a Yes vote in the upcoming referendum on independence.

In recent weeks both H.M. Treasury and the Scottish Government’s Fiscal Commission have issued major publications looking at some of the key issues influencing North Sea fortunes and, in particular, the role some form of an ‘Oil’, or Savings, Fund might play under independence.

The Fiscal Commission’s (FC) paper took a largely theoretical look at the merits of such a Savings Fund without analysing the implications of its own recommendations given what we know about future North Sea output, tax revenues and current spending patterns.

The primary focus of this briefing paper therefore is to gauge the scope for a net fiscal gain/loss post independence and then to apply the FC principles to the current best estimates of future North Sea oil and gas revenues, in order to try to outline the size of the potential trade-offs that may be needed for a Savings Fund to be established in an independent Scotland.

• Based on the independent OBR’s central estimate of future UK North Sea revenues, Scotland could be facing a fiscal loss from independence. It would be giving up the transfer from the rest of the UK implicit in the existing Barnett arrangement, of around £7 billion a year in cash terms, whilst retaining its geographic share of North Sea revenues, of around £5-6 billion in 2015-16, and which are projected to fall slowly thereafter. This would also call into question the sustainability of setting aside tax revenues to establish a long-term Savings Fund.

• This net loss position contrasts with the situation seen over the years 2005-06 to 2011-12 when a similar switch in funding sources between the UK (via Barnett) and the North Sea would have seen a net gain for Scotland.

• The principal reason for this switch in an independent Scotland’s fiscal outlook is the projected rapid decline in North Sea production levels, coupled with a tempering of the peak oil prices seen in 2011. Production has declined by 30% in the last 3 years alone. Most experts agree that the rate of decline is likely to be halted, or even slightly reversed, in the short-term, given current record levels of investment in the North Sea. However, they also accept that whilst the working life of the North Sea may be extended, future levels of production and taxable revenues are likely to be greatly influenced by the need to spend more per barrel just to keep the ageing infrastructure safe whilst also limiting production ‘outages’.

• The paper looks at a number of relevant alternative North Sea revenue scenarios. These include: different assumptions by HMRC and by Kemp & Stephens over Scotland’s geographic share of North Sea revenues; and different production outlooks by Oil & Gas UK and the OBR. In each case, up to 2017-18 initially, North Sea revenues would be at, or below, the £7 billion needed to compensate for the loss of Barnett related funds.

• Clearly a slow steady decline is not the only outcome possible, rather it is based on the most likely forecasts currently available. Historically these forecasts have not been very
reliable and so the degree of uncertainty is high, although there is no reason to consider them biased in any particular direction.

- In order for there to be no net loss to Scottish public finances in moving from the current Barnett arrangement there would need to be an increase in production levels, an increase in prices, or both. Such a shift upwards is more likely to occur as a result of a higher oil prices than the production rise needed, as price movements are likely to remain highly erratic. However, there is no predictable pattern in the movements of the oil price over time so one cannot say that such a shift up is more likely than a shift down that would further worsen Scotland’s public finances.

- Previous Scottish Government scenarios for future oil revenues have forecast significant short term ‘surpluses’ (i.e., amounts surpassing £7 billion). However, these scenarios have proven to be optimistic, as they are not based on the most up-to-date price and production projections. Since their original publication, the Scottish Government’s alternative North Sea revenue scenarios, as well as the OBR’s most recent forecasts, have turned out to be well above the actual out-turn for 2012-13 and the likely out-turn for 2013-14.

- Longer term forecasts of oil price and production levels suggest that such revenues are likely to decline, as production returns to its downwards trend.

- This paper acknowledges that the setting up of a Savings Fund remains a worthy ambition and shows that setting aside, relatively small sums, for such a fund would be possible if spending was cut. For this to have little impact on current Devolved spending areas, then savings to the currently Reserved spending areas such as Defence and Foreign Affairs, might be possible, specifically if they were to be in line with the spend per head experienced in similar, small, independent economies. If this were to amount to £3 billion such savings a year then a small ‘surplus’ may be possible. However, even if this were manageable, and assuming that any knock on impacts from reduced employment and related taxes did not offset such savings, the annual input into such a fund is likely to be relatively small and not on anything like the scale seen in Norway.

- If the creation of such a Savings Fund were possible then the relative benefits between setting up such a fund versus paying down existing debt would need to be carefully considered. The merits of each would depend heavily on the relevant interest rates attached, as reducing debt also benefits future generations in that they no longer need to pay debt interest charges that could otherwise be spent on public services or tax cuts.

- This paper also highlights that there are now two, quite different, estimates of Scotland’s share of North Sea revenues (by HMRC and Kemp & Stephens) and calls on both Government’s to attempt to identify which is the more accurate.

The main findings of this paper will be updated in the future in line with updated forecasts for North Sea revenues by OBR and in light of new oil price and production forecasts.
1. Introduction

The importance of the North Sea to the shape of the Scottish economy and to the Scottish Government’s finances is one of the few ‘known’ significant differences that would occur post independence.

For this reason there has been a considerable amount of material published on the subject in the lead up to the independence referendum. Much of this material has addressed the issue of how North Sea revenues should be treated, especially with respect to the potential to grow a Norwegian style ‘oil fund’.

In recent weeks both the UK Treasury\(^1\) and the Fiscal Commission\(^2\) appointed by the Scottish Government have addressed this issue in some detail. In particular, the latter set out the rationale, and the practical arrangements necessary, for setting up both a short term ‘Stabilisation Fund’ and a longer term ‘Savings Fund’.

This Briefing Paper follows on from these reports and uses the latest information available to try to assess the potential for the creation of such funds, given what is currently known about Scottish and North Sea public finances. It concentrates on the longer term Savings Fund, as this is the more radical shift in thinking and operation that is being proposed. In contrast, the Stabilisation Fund proposed by the FC is simply a convenient way of smoothing an erratic income source over time, with no net saving involved\(^3\).

The paper looks at two related issues with regards to the Savings Fund\(^4\):

- First, whether the shift from being part of the UK (where Scotland receives above its population share of onshore UK tax revenues to spend on existing public services) to being independent (where Scotland would lose this net inward transfer of onshore tax revenues but gain ownership of the majority of North Sea tax revenue) is likely to represent a net gain or loss of public finance;

- Second, the viability of building up a longer term Savings Fund, either through the accumulation of ‘excess’ oil revenues or through some of other method.

As we will show, the idea that North Sea tax revenues should be viewed as a ‘bonus’ under independence is wrong. Rather it should be viewed as a substitute to the existing transfer of UK resources, largely via the Barnett formula.

Over the past thirty years (i.e., since the North Sea started to make a meaningful contribution to UK taxes), the substitution of UK onshore tax transfers by North Sea taxes would, overall, have left Scotland better off, although there was little consistency, year by year on this net benefit (see Figure 3). However, when trying to predict the future taxable profits relating to a declining natural commodity, like North Sea oil, the past has little relevance. Furthermore, assessing which system would leave Scotland financially better off in the future is fraught

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1 See ‘Scotland Analysis: Macroeconomic and fiscal performance’, especially Chapter 4 and Annex B.
3 Ibid., p32-33.
4 While this paper concentrates on the potential impact of independence on Scotland’s fiscal balance there are also other significant impacts from retaining most of the North Sea activity on the Scottish economy. Some of these impacts have been addressed in previous CPPR Briefing Papers, for example, see ‘Measuring an independent Scotland’s economic performance’. Annex 1 also addresses some of the more common misconceptions about the impact of North Sea oil on Scotland’s economy and future finances.
with difficulties, as North Sea revenues are highly erratic in nature and dependent on, for example, the whim of international oil prices in particular.

Nevertheless, in order to further inform the referendum debate, this paper seeks to provide an insight as to where Scotland would stand in terms of this trade-off between alternative public service funding sources.

2. Scotland’s fiscal position with and without independence

At present, the money needed to pay for Scottish public services comes largely from the Treasury, either through UK spending Departments (e.g. Department for Work and Pensions, DWP) or via the Barnett formula directly to the Scottish Parliament to pay for health, education etc.

Theoretically, this expenditure can be split up into a number of sources:

- revenue from taxes raised in Scotland;
- a transfer of funds from taxes raised elsewhere in the UK;
- a share of the UK borrowing needed when total revenues fail to cover all spending.

Post independence, the key difference to this set up would be that the transfer of funds from taxes raised elsewhere in the UK would be lost to Scotland, but that instead the majority (around 79-95%) of North Sea revenues would now come directly to Scottish Government coffers. These alternative budget-financing structures are illustrated in Figure 1, using 2010-11 as an example, to show how this transfer could be at, above or below the Barnett related transfer, depending on the geographical share used.

In past years North Sea revenues have been both above (substantially so in some years in the 1980s) and below the UK transfer, while in 2010-11 they were roughly in balance, with the geographic share due to Scotland determining whether the net position would have been the same or resulted in a small gain.

The shift to independence would mean that instead of a ‘top up’ of onshore Scottish revenues via the operation of the Barnett formula, which to date has been relatively predictable, Scotland would instead benefit from a ‘top up’ to such revenues via what is likely to be the less predictable flow of North Sea tax revenues. Historically, there has been no consistency on whether one such ‘top up’ outweighs the other, largely due to the huge fluctuation seen over time in oil prices.
Figure 1: Composition of Scottish public spending sources pre- and post-independence, £ billion (illustrative year, 2010-11)

The remainder of this Briefing Paper largely ignores the borrowing element seen in Table 1, in order to concentrate on the relative position of Scotland against that of the UK. This simplifies the calculations being made and the principal point being addressed. However, the trade off between reducing debt (i.e., accumulated borrowing) and building up a Savings Fund is addressed in Section 7.

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Notes: (i) North Sea revenues based on a range given by HMRC and Kemp & Stephens (K&S) estimates (see Box 1); (ii) total UK North Sea revenues in line with latest HMRC estimates, updated from latest GERS publication; (iii) Scottish ‘Borrowing’ assumed to be a population share of UK Borrowing.

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\(^5\) Discussion of Scotland’s credit rating and other issues in relation to the cost of future borrowing and the debt level which an independent Scotland could support are also not addressed in this paper.
Box 1 Scotland’s geographic share of North Sea revenues

There are currently two sources for determining Scotland’s geographic share of North Sea revenues. The first is the work of Kemp & Stephens (K&S) from the University of Aberdeen, which has been used for a number of years in drawing up estimates used in the annual Scottish Government GERS publication. The second, more recent, source is produced by HMRC.

In general, the two methodologies are based on similar assumptions: both are working from the HMRC’s overall UK tax revenues total with regards to the North Sea (stemming from Corporation Tax and Petroleum Revenue Tax); both use the same boundary line to differentiate between Scottish and English waters; and both use production data on a field by field by basis. The principal difference is over the assumptions made on field-by-field costs and tax offsets which means that the distribution of profits and tax revenues across fields in the English and Scottish sectors differs.

However, the two different methodologies, while similar in many ways, can come up with very different Scottish shares, as shown in Table (a). For example, in 2011-12, HMRC calculate Scotland’s share of North Sea revenues to be 83%, while K&S put it at 94%, with the difference equating to £1.2 billion (as shown in Table 1, line 7).

Table (a): HMRC and Kemp & Stephens shares of North Sea revenues, 2007-08 to 2012-13

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<tr>
<td>K&amp;S</td>
<td>95%</td>
<td>91%</td>
<td>91%</td>
<td>92%</td>
<td>94%</td>
<td>n/a</td>
</tr>
<tr>
<td>HMRC</td>
<td>83%</td>
<td>84%</td>
<td>88%</td>
<td>86%</td>
<td>83%</td>
<td>79%</td>
</tr>
<tr>
<td>Difference (% points)</td>
<td>-12</td>
<td>-7</td>
<td>-3</td>
<td>-6</td>
<td>-11</td>
<td>-</td>
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</table>

The workings of both the HMRC and the K&S models are not easily replicated, making it difficult to determine which may be the more accurate. The HMRC estimates are new and are described as ‘experimental statistics’ for now, as they are still “in a developmental phase and subject to review”. Nonetheless, HMRC has access to all the North Sea data available and so should be in as good a position as anybody to judge on matters of allocation.

The IFS (2013 ii), in reviewing the two methodologies, do not indicate that one is more reliable than the other. The reality is that we would not know until after independence exactly what share of North Sea taxes would accrue to a Scottish Treasury.

Throughout this paper we use both estimates to provide a range of results.
3. Scotland’s net gain within the UK from onshore tax revenues

Scotland receives more than its population share of public expenditure in the UK and this higher per capita spend is not matched by equally higher onshore tax receipts raised in Scotland. Such a net gain can be defended on the grounds that, in order to supply an equal level and quality of public services, Scotland requires more spend per capita due to the relative physical size of Scotland and the existence of a chain of inhabited islands. While ‘needs’ in Scotland may be higher for this reason, the current spending level is a result of historical accident rather than having been planned to meet a measured higher level of need.

The size of this net gain from being part of the UK can be estimated using data available from the Scottish Government’s publication ‘Government Expenditure and Revenue in Scotland’ (GERS) document.

Figure 2 (and Table 1, lines 5 and 6) illustrates this differential in terms of the degree to which Scotland has a larger onshore fiscal deficit than the UK, both in terms of this deficit as a share of GDP (as shown in GERS) and after converting this to a cash terms equivalent.

**Figure 2: Scotland’s onshore fiscal balance, relative to the UK, £ billion (cash) & as a % of GDP**

![Figure 2: Scotland’s onshore fiscal balance, relative to the UK, £ billion (cash) & as a % of GDP](image)

*Sources: see Table 1.*
Table 1: Scottish and UK fiscal balances, £ billion (nominal prices) & % of GDP

<table>
<thead>
<tr>
<th></th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
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<tr>
<td><strong>Scotland, onshore</strong></td>
<td></td>
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<tr>
<td>1 Balance exc North Sea revenues</td>
<td>-11.1</td>
<td>-15.5</td>
<td>-20.4</td>
<td>-19.7</td>
<td>-18.2</td>
</tr>
<tr>
<td>2 Balance exc North Sea as a % of GDP</td>
<td>-9.7%</td>
<td>-13.1%</td>
<td>-17.4%</td>
<td>-16.1%</td>
<td>-14.4%</td>
</tr>
<tr>
<td><strong>UK, onshore</strong></td>
<td></td>
<td></td>
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<tr>
<td>3 Balance exc North Sea revenues</td>
<td>-44.2</td>
<td>-110.4</td>
<td>-165.4</td>
<td>-149.8</td>
<td>-132.3</td>
</tr>
<tr>
<td>4 Balance exc North Sea as a % of GDP</td>
<td>-3.2%</td>
<td>-7.9%</td>
<td>-11.9%</td>
<td>-10.3%</td>
<td>-8.8%</td>
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<td><strong>Relative differences</strong></td>
<td></td>
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<tr>
<td>5 Scotland minus UK as a % of GDP (2-4)</td>
<td>-6.5%</td>
<td>-5.2%</td>
<td>-5.5%</td>
<td>-5.8%</td>
<td>-5.6%</td>
</tr>
<tr>
<td>6 Scotland’s higher relative deficit, £ billion</td>
<td>7.4</td>
<td>6.2</td>
<td>6.5</td>
<td>7.1</td>
<td>7.1</td>
</tr>
<tr>
<td>7 North Sea revenues (i), Scottish share, £ billion</td>
<td>6.1/7.0</td>
<td>10.4/11.3</td>
<td>5.2/5.4</td>
<td>7.1/7.6</td>
<td>9.4/10.6</td>
</tr>
<tr>
<td>8 Difference, row 7 minus row 6</td>
<td>-1.3/-0.4</td>
<td>+4.2/+5.1</td>
<td>-1.3/-1.1</td>
<td>0.0/+0.5</td>
<td>+2.3/+3.5</td>
</tr>
</tbody>
</table>

Sources: rows 1-4, GERS 2013; rows 5-8, CPPR calculations.

Notes:
1. The ranges shown in rows 7 and 8 are based on Scottish geographic shares for North Sea revenues taken from work by (a) Kemp & Stephen and (b) HMRC.
2. While Table 1 shows Scotland’s share of North Sea revenues to be insufficient to compensate for lost UK revenue transfers in 2009-10, if looked at in terms of the fiscal deficit as a % of GDP then Scotland has a lower deficit than the UK in this year. The reason for this is the impact of North Sea GDP on the overall Scottish GDP denominator in this calculation. This is due to the complicating effect of North Sea GDP on the Scottish figures and how such an effect is best measured (see CPPR, 2013ii, for more details).
3. The low relative deficit seen in 2008-09 is caused in large part by a significant increase in ‘Gross Operating Profits’ and in Scotland’s share of it that year. This effect was reversed in later years.

Scotland’s relative fiscal deficit averages approximately £7 billion a year (in cash terms) over the period 2007-08 to 2011-12\(^6\).

To be clear, this £7 billion figure equates to the value of the fiscal deficit Scotland would still be running at the point where the UK reaches a fiscal balance, i.e., at the point when UK spending matches its revenues. The £7 billion reflects the higher spending per head and lower onshore revenue per head that Scotland experiences in comparison to the UK as a whole\(^7\).

This net benefit to Scotland from the division of onshore UK tax revenues is long standing and uncontroversial, as Figure 3, from the Scottish Government shows.

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\(^6\) The £7 billion figure is also an approximation for a variety of other reasons, including: (i) it ignores future inflation of this cash based figure; (ii) the Rest of the UK (RUK) would be in a slightly better position than the UK as a whole as the higher Scottish spend area would be removed from it; and (iii) Scotland’s ‘excess’ could rise or fall as total UK borrowing falls and taxes and spending fall more into line with each other.

\(^7\) In 2011-12, the figures from GERS show that spending per head was 11% higher per head than for the UK and onshore revenues were 2% lower. This equates to roughly £6.4 billion more spending and £1.1 billion less tax revenue than Scotland’s population share.
Looked at as a share of GDP, the Scottish onshore fiscal deficit has been higher than that for onshore UK by between 5½% to 7% of GDP since devolution and, has been around this level of difference right back to 1980. Over the decade 2002-13 to 2011-12, this has equated to a cash terms difference of £6 to 7½ billion (over £7 billion in real terms, 2011-12 prices, in each year). Hence, and in the absence of any stated fundamental change in post-independence tax and spend policies, the assumption of an on-going onshore deficit, relative to the UK, of a similar size going into the future seems reasonable.

4. Scotland’s net position including North Sea revenues

In order for this onshore net public sector transfer from the rest of the UK to Scotland to be (more than) met from an alternative source, post-independence, North Sea revenues would need to equal, or be greater than, the existing £7 billion net transfer.

Figure 3 (which illustrates the difference in terms of the fiscal position as a % of GDP) shows that, on average, this has pretty much been the case since 1990, while during the eighties North Sea revenues were substantially higher.

Figure 4 (taken from Table 1, lines 6 and 7) looks in more detail at the impact of adding in Scotland’s share of North Sea revenues for the period 2007-08 to 2011-12, based on both the K&S and the HMRC share estimates (see Box 1). It shows that this net transfer to Scotland within the UK would have been more than met by Scotland’s share of North Sea revenues in 3 of the most recent 5 years that GERS covers (to 2011-12), as well as cumulatively over this period as a whole under both North Sea revenue share estimates
Figure 4: Scotland’s on-shore fiscal deficit, relative to the UK, & estimates for Scottish North Sea taxes based on Kemp & Stephens and HMRC, £ billion (cash)

GERS based figures are only available up to 2011-12. However, on the assumption that the onshore net shortfall of around £7 billion remains fairly constant, in the short term at least, and there is no evidence on offer to presume otherwise, then we can use out-turn North Sea oil revenue figures for 2012-13, partial out-turn figures for 2013-14 and Office of Budget Responsibility (OBR) Budget forecasts for later years to look at the likely net gain/loss post 2011-12, as shown in Table 2 and Figure 5.

Table 2: Scottish relative fiscal balance, £ billion (nominal prices), central scenarios

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<tbody>
<tr>
<td>1 Scotland’s higher relative deficit</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
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<tr>
<td>2 UK North Sea revenues, OBR</td>
<td>6.5</td>
<td>6.1</td>
<td>6.1</td>
<td>4.7</td>
<td>4.8</td>
<td>4.3</td>
</tr>
<tr>
<td>3 Scottish NS revenues, OBR</td>
<td>5.1/6.2</td>
<td>4.8/5.8</td>
<td>4.8/5.8</td>
<td>3.7/4.5</td>
<td>3.8/4.6</td>
<td>3.4/4.1</td>
</tr>
<tr>
<td>4 Scottish NS revenues, Flat-bounce</td>
<td>5.1/6.2</td>
<td>4.8/5.8</td>
<td>5.0/6.0</td>
<td>5.7/6.8</td>
<td>6.0/7.2</td>
<td>6.2/7.5</td>
</tr>
<tr>
<td>5 Net gain/loss, row 3 minus row 1</td>
<td>-1.9/-0.8</td>
<td>-2.2/-1.2</td>
<td>-2.2/-1.2</td>
<td>-3.3/-2.5</td>
<td>-3.2/-2.4</td>
<td>-3.6/-2.9</td>
</tr>
<tr>
<td>6 Net gain/loss, row 4 minus row 1</td>
<td>-1.9/-0.8</td>
<td>-2.2/-1.2</td>
<td>-2.0/-1.0</td>
<td>-1.3/-0.2</td>
<td>-1.0/+0.2</td>
<td>-0.8/+0.5</td>
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Sources: row 1, average taken from Table 1; row 2 from HMRC and OBR; rows 3 to 6, CPPR calculations using HMRC outturns, OBR forecasts, Oil and Gas UK forecasts.

Notes: (i) post 2012-13 the range used for the Scottish share of forecast North Sea revenues is 79-95%, which covers the range estimated by HMRC and Kemp & Stephens over the period 2007-08 to 2012-13; (ii) for 2012-13, UK North Sea revenues figure is an out-turn; (iii) the 2013-14, the UK North Sea revenues figure is based on the (March) OBR figure of £6.8 billion, adjusted down by a conservative 10% to account for known lower production and price levels seen over the first half of the financial year.
Figure 5: Scotland’s net fiscal gain/loss if independent, based on OBR projections and (a) Kemp & Stephens and (b) HMRC estimates for Scottish North Sea taxes

£ billion (cash)

Sources: As for Table 2

OBR Central projections

Figure 5 shows that, based on actual outturn figures for North Sea revenues, there would have been a net loss had Scotland been independent in 2012-13 and 2013-14 of around £1.2 billion. By 2015-16 the OBR’s independent central forecast of North Sea revenues implies this net loss to have risen to £2.5 to 3.3 billion and by 2017-18 it would have risen to between £2.9 to 3.6 billion.

OBR’s central forecast for North Sea revenues is based on flat production over the next 5 years and a falling, cash terms, oil price. The former halts the steady slide in production seen in every year since the peak of production (1999) and in particular the big falls seen in 2011 (-19%) and 2012 (-14.5%). This flat production profile is intended to reflect the higher investment seen in recent years. The price forecasts are based on the oil price futures curve (i.e., the market’s current view on future oil prices).

It is worth noting that the OBR forecasts post 2013-14 could be considered to be ‘optimistic’ as they have not been revised to reflect the downgrades by UK Department for Energy & Climate Change (DECC) to North Sea production forecasts (made in October and down 9-12% on those used by OBR at the time of the UK 2013 Budget) nor for the lower sterling oil price experienced recently (down 13% in 2013-14, largely due to a strengthening pound). Were these revisions to be incorporated in the (March) OBR forecasts then post 2013-14 UK revenues would be significantly lower.
“Flat-bounce” projections

Despite these recent down-gradings in key elements that contribute to North Sea revenues, Figure 5 and Table 2 also include a more optimistic scenario (“Flat-bounce”), based on the latest Oil & Gas UK production forecasts and a flat, cash terms, oil price\(^8\). Under this, more optimistic, scenario the onshore ‘gap’ is closed by 2016-17 using the Kemp & Stephens Scottish share for North Sea revenues, although no significant excess is available for any Savings Fund. Using the HMRC share estimate a small gap still remains. It should also be noted that the Oil & Gas UK production forecasts peak in 2017 and return to a downwards trend thereafter, so that a gap is likely to re-emerge post 2017-18 under both production scenarios and both estimates for Scotland’s share of future North Sea revenues.

Central scenario implications

The conclusion from the two scenarios discussed above would appear to be that, given known commitments to existing spending levels, unless conditions affecting the North Sea improve significantly for the better in the future, then moving to a position of independence would most likely lead to a small net loss in government funds, as the gain in future oil revenues failed to match the loss from leaving the UK’s funding system.

It follows from this that no relative surplus would be available for the creation of a long term Savings Fund. At present, the likelihood is that the reverse would be true, with expenditure cuts, or tax rises, being needed to retain the current level of public services.

The next question is how much would things need to change to alter this finding fundamentally?

Scottish Government projections, including comparison to out-turns

The Scottish Government published scenarios earlier this year, which resulted in much higher forecasts of North Sea revenues than those made by the OBR.

Figure 6 and Table 3 illustrate the two most optimistic of these scenarios in a similar way as shown for Figure 5 and Table 2. In the first (scenario 3) future production follows the path projected by Oil & Gas UK in March 2013 and assumes an oil price of $113 in cash terms throughout. In the second (scenario 5) future production also follows the path projected by Oil & Gas UK in March 2013, but with an oil price continuing to rise in real terms, in line with DECC’s central projections from October 2012\(^9\).

Figure 6 shows that, post 2013-14, both of the Scottish Government’s most optimistic scenarios produce net fiscal gains when Scotland’s geographical share of North Sea taxes replace the Barnett grant. However, in reviewing these scenarios it is important to consider recent North Sea developments in some more detail.

\(^8\) Note, this scenario uses the 2013-14 partial out-turn North Sea revenues estimate and adjusts for the Oil & Gas UK higher production projections. The scenario is very similar to that used by the Scottish Government as its scenario 2 in Oil & Gas Analytical Bulletin. Had the Scottish Government’s scenario 2 been updated for the revised Oil & Gas production estimates it would have shown lower figures than those seen in the ‘Flat-bounce’ scenario shown here.

\(^9\) More recent DECC price projections (July 2013) still show price increases slightly above inflation but from a lower starting point than was estimated in 2012 (see Annex 3).
Figure 6: Scotland’s net fiscal gain/loss if independent, based on Scottish Government oil price scenarios and both (a) Kemp & Stephens and (b) HMRC estimates for Scottish North Sea taxes, £ billion (cash)

Table 3: Scottish relative fiscal balance, £ billion (nominal prices), optimistic scenarios

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<td>1 Scotland’s higher relative deficit</td>
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<td>2 Scottish NS revenues, scenario 3</td>
<td>5.1/6.2 (6.5)</td>
<td>4.8/5.8 (7.5)</td>
<td>6.6/8.0</td>
<td>6.6/7.9</td>
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<td>3 Scottish NS revenues, scenario 5</td>
<td>5.1/6.2 (7.2)</td>
<td>4.8/5.8 (8.3)</td>
<td>7.8/9.4</td>
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<td>8.9/10.7</td>
<td>9.8/11.8</td>
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<td>4 Net gain/loss, row 2 minus row 1</td>
<td>-1.9/-0.8 (-0.5)</td>
<td>-2.2/-1.2 (+0.5)</td>
<td>-0.4/+1.0</td>
<td>-0.4/+0.9</td>
<td>+0.1/1.5</td>
<td>+0.6/2.2</td>
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<tr>
<td>5 Net gain/loss, row 3 minus row 1</td>
<td>-1.9/-0.8 (+0.2)</td>
<td>-2.2/-1.2 (+1.3)</td>
<td>+0.8/2.4</td>
<td>+1.0/2.7</td>
<td>+1.9/3.7</td>
<td>+2.8/4.8</td>
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Sources: row 1, average taken from Table 1; rows 2 and 3, from Scottish Government’s ‘Oil and Gas Analytical Bulletin’, March 2013, except 2012-13, taken from HMRC and 2013-14, CPPR estimate based on partial out turn figures; rows 4 and 5, CPPR calculation.

Note: figures in brackets for 2012-13 and 2013-14 relate to the original estimates for these years made in the Scottish Government’s Oil and Gas Analytical Bulletin.

- First of all, North Sea revenue out-turn in 2012-13 was noticeably lower than forecast in either of the Scottish Government’s most optimistic forecasts (£6.5 billion out-turn versus £7.4 to 7.7 billion forecast). This overestimate, as against resultant out-turn information is also likely to be repeated in 2013-14 (estimated £6.1 billion out-turn versus £8.1 to 8.9 billion forecast).

- In March 2013, Oil & Gas UK was expecting a marginal decline in production in 2013 but now (September 2013) is expecting production to fall by 8.5% compared to 2012. It
has also revised down its production forecasts in each year up to 2018, although it still builds in a rise in output from 2013 levels to 2017.\(^{10}\)

- DECC’s latest forecasts of production also reflects the lower than projected outturn so far achieved for 2013, and are down 9-12% on the estimates used at Budget time by the OBR.

- In terms of the future price of oil, the use of $113 a barrel for 2013-14 is above the average so far in the first 5 months of 2013-14, which has been nearer to $110\(^{11}\) (see Annex 3 for more details on current international oil price projections).

- All of the above means that North Sea revenue out-turn in 2013-14 will very likely be below what the OBR’s last forecast (March 2013) and much lower than the Scottish Government’s most optimistic scenario, as estimated only 6 months ago.

If all of these revisions were used to update the Scottish Governments scenario analysis\(^{12}\) then it is likely that the scenario 3 surplus shown in Figure 6 (and Table 3) would all but disappear and the, highly optimistic, scenario 5 surplus would be substantially reduced.

As Figure 6 shows, at present, the out-turn data for 2012-13 and 2013-14 implies that a considerable jump up in revenues post 2013-14 would be needed if the most optimistic Scottish Government scenarios were to arise.

The Scottish Government’s Oil and Gas Analytical Bulletin used the OBR analysis, taken from December 2012, as the lowest outcome for Scottish North Sea revenues of its 5 scenarios. The extra North Sea related data available since then has shown that, for 2012-13 and for 2013-14, rather than being closer to one of the Scottish Government’s four alternative higher estimates, North Sea revenues have been, or are likely to be, even lower than the OBR forecast at that time.

This does not mean that it is impossible for some of the very optimistic outcomes to arise in future years, but it does highlight the dangers of only looking on the upside in such a difficult to predict sector as the North Sea.

5. Longer term forecasts

While the North Sea tax projections shown in Figures 5 and 6 are useful they only extend into the infancy of any newly independent Scotland. What is of even greater interest is the likely outcomes beyond 2017-18 and well into the medium to longer term. Obviously the further out we go the less certain things get, nevertheless we do have some information to base such forecasts on.

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\(^{10}\) These revised figures were not used in the Fiscal Commission’s recent paper.

\(^{11}\) In sterling terms the equivalents are a projection of £73.4 and an average so far of around £69.

\(^{12}\) In the initial publication of its ‘Oil and Gas Analytical Bulletin’ in early March 2013, the Scottish Government stated that “Further updates will be published in due course”. Since that time there have been updated figures from the OBR, Oil and Gas UK, DECC and HMRC, all of which indicate lower out-turns and forecasts than were used by the Scottish Government in its initial publication. However, thus far, the Scottish Government has not provided any update to its bulletin.
With regards to North Sea oil, there is universal agreement (OBR, DECC, Kemp & Stephens, Oil & Gas UK, etc) that production, after a flattening off period, or slight bounce-back, to 2017-18, will resume its downward trend.

Since 1999 the decline in North Sea production has averaged 7.9% a year. Post 2017-18, OBR have assumed a slightly slower decline, of 5% a year up to 2040-41.

Future oil prices are far less certain and this is reflected in the forecasts of different bodies, which range from declining in cash and real terms (OBR, IMF, World Bank, IEA (medium term outlook)) to rising in cash and real terms (DECC, IEA (long term outlook), EIU). The difference tends to equate to whether the current futures curve (falling price) is used or is based on a supply and demand model (see Annex 3 for examples).

OBR make long-term forecasts based on three (central, upper and lower) different scenarios based on different price and production profiles and at no point, up to 2040-41, would any of these scenarios equate to Scottish sector North Sea revenues of the order of the £7 billion required to offset the Barnett related loss.

OBR long term scenarios (see Figure 7) suggest that it is increasingly unlikely, the further into the future we look, that the funding gap will be filled, or that a Savings Fund surplus will emerge. This is because, while great uncertainty dominates, the most likely of the future events is that North Sea production will continue to fall.

Figure 7: OBR scenarios to 2040-41 for UK North Sea revenues as a % of GDP

With all forecasters expecting production to return to a long-term position of annual decline post 2017-18, then it is the degree to which this production decline could be offset by any year-on-year rise in prices that would determine whether North Sea tax revenues rose or fell.
Using the OBR’s forecast of production falling by 5% a year from 2018 to 2040, then oil prices would need to rise at more than twice the pace of general inflation (which OBR estimate to be 2.2% p.a.) in order for revenues to remain at the levels seen in the years to 2017-18\(^{13}\).

These tentative longer term projections suggest that the likelihood of sufficient oil related funds being available to fill the gap from losing Barnett related funds, or to build up a Savings Fund, declines the further into the future we go.

6. The case for introducing a Scottish Oil Fund or Funds

The analysis thus far has been pessimistic with regards to the potential for future North Sea revenues being of a sufficient size to allow for the building up of a Savings Fund, post-independence.

However, it should be acknowledged that the creation of both a Stabilisation Fund and a Savings Fund would be desirable outcomes. The former, simply as a way of smoothing an erratic source of government income, the latter, in order to help lengthen the time period over which funds accruing from a finite natural source would benefit successive generations.

If that is the case, and if simply using the inherited patterns of tax and spend and the latest forecasts of future North Sea revenues does not allow for a Savings Fund to emerge, then how might things change in order to allow such a Savings Fund to be created?

7. Alternative routes to an oil fund

The Fiscal Commission recommended that an independent Scotland should attempt to target and achieve an onshore Budget balance as soon as possible. This is a desirable but very ambitious target, given (i) the degree to which the Scottish onshore Budget is in deficit (£18.2 billion in 2011-12, or 14.6% of onshore GDP) and (ii) the degree to which it would still be in deficit once the UK was in balance (around £7 billion), as outlined above.

However, even a move to a greater degree of onshore fiscal balance could allow for a Savings Fund to be created in the longer term.

In order to get nearer to an onshore balance, tax rises or public spending cuts would be needed. How might this arise?

Assuming Scotland retains current UK tax rates and devolved levels of spending on devolved public services, then the key to achieving an on-shore fiscal balance could lie in Scotland achieving savings on what it spends on those areas that are not currently devolved.

One such example of how this might be achievable involves looking at changes to expenditure on Defence and Foreign Affairs.

\(^{13}\) The implications of rising oil prices can be complicated. For example, if the costs of production increase in a similar manner, this will reduce profitability and so tax related revenues. Annex 2 discusses some of these complications in more detail.
Scotland’s share of UK Defence spending is worth approximately £3.4 billion and the current SNP-led Scottish Government has indicated it would spend £2.5 billion post-independence. However, the IFS recently highlighted that if Scotland spent a share in line with other small advanced economies, then this could fall to around £1.75 billion and if it matched Irish spend, to only £0.75 billion.

Savings could also be made with regards to Overseas Direct Aid (ODA), if spending was reduced to be in line with the average for OECD members of the Development Assistance Committee (DAC). However, at present the SNP are committed to spending an even higher figure than its current share of UK spend in this area.

Other spend on Foreign Office related matters, including embassies, trade delegations etc, are also likely to offer up potential savings, if Scotland followed a more low key overseas presence, in line with most other small advanced economies. However, it is difficult to estimate such savings as comparable international data is less readily available.

On Defence alone, a potential annual saving of up to £2.65 billion could be made. Other potential savings could take this figure over £3 billion a year and help to both fill the funding gap seen in Figure 5 and potentially start to accumulate “excess” funds in a Savings Fund (see Figure 8).

It should be emphasised that this expenditure saving is likely to be an overestimate as the job, and tax revenue, losses from reduced Defence spending would offset, to some degree the savings made, although the degree of offset is difficult to estimate in advance.

Figure 8: Scotland’s net fiscal gain/loss if independent, based on OBR projections assuming £3 billion savings per annum from 2015-16, £ billion (cash)

Sources: As for Table 2
However, even if such a relatively small annual saving were achievable, it would provide little in the way of annual interest receipts available to spend for many years to come.

It is worth noting that unless the earnings from such a Fund are very large, as in the case of Norway, it would take great fortitude, applied over a long period of time, for any Government to forego the potential electoral benefits available from using, say, £1 billion a year.

Having said that, the arguments outlined by the Fiscal Commission for setting up such a Fund remain convincing. What needs to be guarded against is the expectation that a Norwegian sized Fund is possible, outside wholly unexpected future changes in the oil market.

One aspect of the Fiscal Commission’s recommendations that has perplexed some commentators is that a Savings Fund might be initiated while Scotland still had a fiscal deficit.

The rationale for this is set out in their paper (see pages 61 to 62). It is a mixture of claiming that planning for such a Fund will set a good example and strengthen the likelihood of its being pursued in the long term, alongside the possibility that the revenues from the Savings Fund investments might outstrip the payments associated with existing, or new, government debt. An example is given (footnote 87) where the returns to Norwegian Fund outstrip the yield from 10 year UK government bonds over the past 5 (highly unusual) years. However, in papers to the Scottish Cabinet, recently released under a Freedom of Information request, Scottish Government economists showed that if this comparison were made over a longer period, 2000 to 2011, then the reverse was true.

While there are good reasons to consider setting up such a Savings Fund in advance of an independent Scotland being near fiscal balance and near to eradicating its overall debt position, these should not be overstated. The relative benefits between setting up a Savings Fund and paying down debt will depend on the interest rates attached. Reducing debt also benefits future generations as they no longer need to pay debt interest charges that could otherwise be spent on public services or tax cuts.

An alternative route to reaching an onshore fiscal balance would be for the economy to grow more quickly, thus generating increases in tax revenues but without public expenditure rising to absorb all the increase. While such a scenario is possible there is little or no convincing evidence as to how such a turnaround in absolute and relative economic growth would arise. Without any such faster growth rate, Scotland’s public spending outlook will depend on the analysis above.

Overall, looking from a wider perspective suggests that the creation of a Savings Fund could be possible but it will require difficult and radical decisions to be taken across the Scottish Budget. Furthermore, it is very unlikely that such a Savings Fund would grow rapidly.

**8. Conclusions and Recommendations**

In reaching any conclusions from this paper it is important to emphasise that the value of commodity related revenues, such as with North Sea oil, is one of the hardest of all government funding sources to predict. Hence, while the analysis in this paper is based on the current evidence, all such commodity forecasts remain highly uncertain.
Nevertheless the paper describes the fiscal implications for an independent Scotland reliant on the current outlook for North Sea revenues and the degree to which circumstances would need to change for a different outcome to arise.

It suggests that there will be a net fiscal loss under independence, looking into the future. So not only would a Savings Fund be unaffordable but cuts to existing funding levels would need to be made in order to attain the same relative position as exists currently within the UK.

In order for this to change, North Sea tax revenues would need to rise to well above currently forecasts levels. The most likely way that this would arise would be for the oil price to rise at well above the rate of inflation.

In the event that such an increase did not arise, and if a Savings Fund was still thought desirable, then funding cuts or increased levels of debt would be necessary in order to achieve a fiscal balance. This is not impossible, so long as an independent Scotland was content to have Defence and Foreign Affairs spending at a similar level to that seen in other comparable small advanced economies.

The other side of the coin, which has not been considered in detail in this paper, as it involves purely political decisions, is what the future holds for the Barnett formula, or any such variant introduced post the upcoming Scotland Bill. If, as seems likely, revenues from the North Sea decline over time then there may be pressure for Barnett related grant support across the Devolved administrations to be based on a different formula. While Scotland’s higher spend per head is not explicitly linked to substantial North Sea revenues from Scottish waters, this provides an implicit defence of such higher spend. Currently it seems unlikely that any UK political party would commit itself to such a substantial one-off cut in Scotland’s budget, but what might be possible is that a new formula could be introduced which ensured that there was greater convergence in spend per head between Scotland, England Wales and Northern Ireland over time.\textsuperscript{14}

Looking forward to the remainder of the debate leading up to the independence referendum, we believe that the following recommendations, if acted up on, would result in greater clarity in weighing up future economic and fiscal prospects:

- For the Scottish and/or UK Government’s to undertake an exercise through which a clearer understanding of whether the HMRC or the Kemp & Stephens estimates of the annual shares of North Sea tax revenues that would accrue to Scotland based on its geographic share. At present the HMRC share is consistently below that of the K&S share and in some years by over 10 percentage points. That is an important difference and one which should be better understood and narrowed in range;

- For Scottish Government economists to provide a revised set of oil and gas price, production and tax revenue scenarios that provide a range of values to aid the assessment of potential public spending plans, not only in the short term but also over a far longer term than is currently available;

\textsuperscript{14} It is worth remembering that the Barnett formula itself was originally introduced to produce just such a result. However, over time, even with adjustments it has failed to do this on a consistent basis.
- For pro-independence political parties to provide the analysis that shows how a Savings Fund will be resourced in the event that North Sea revenues, as seems likely, are of an insufficient scale to allow for this by simply creaming off any ‘excess’ revenues;

- For the UK Government to indicate whether any move towards a more ‘needs based’ allocation of funds across the UK constituent countries is intended in the future and if so how this might be achieved.

Despite the huge amount of work published over the last year by the Scottish Government’s Fiscal Commission, various ESRC funded bodies (e.g. IFS and NIESR) and the UK Treasury, there is still an alarming amount of inaccurate information being presented by both sides of the referendum campaign.

Many of the answers to the most pressing questions with respect to the independence referendum will be inexact and involve some degree of uncertainty. Nevertheless a narrowing of the range of likely outcomes is possible and that has been the purpose of this CPPR paper.
Annex 1 - Issues over the influence of North Sea activities on revenues, GDP and trade

There is much confusion when the North Sea is discussed about exactly how it would fit into the Scottish economy and public finances, or for that matter how it would similarly affect the remainder of the UK. While we cannot provide certainty in all such areas there are some issues that can be clarified.

1. It is an oft repeated claim that future North Sea output may be worth up to £1.5 trillion, implying that in a future independent Scotland much wealth awaits. However, this is a largely meaningless figure. First of all, any such value is heavily dependent on the future price, which is highly uncertain. Secondly, this is described as a “wholesale price” valuation (i.e., the market value of reserves remaining in the ground) whereas what is a more relevant figure for setting spending plans in an independent Scotland is the taxable value of such future output. This taxable value will depend on the taxation regime in place as well as on future prices and production costs. While a precise figure is impossible to estimate it is likely to be well below £1.5 trillion(1).

2. The inclusion of North Sea activity significantly boosts Scottish Gross Domestic Product (GDP), and hence also Scottish GDP per head calculations. However, this is more of a definitional increase as opposed to one that will be felt by Scottish households. This is due to the fact that most North Sea operations are foreign owned (note: not by UK companies but largely by overseas companies) and hence their profits largely accrue abroad. This is something that is not picked up by the GDP measure of economic activity but instead by Gross National Income (GNI)15. What remains in Scotland are the tax revenues relating to such profits. As discussed in the main text of this document, such revenues are not a bonus but rather a replacement for the transfer of public funds into Scotland that currently occurs within the UK public finances system, As has been discussed, this amount can be larger or smaller, largely depending on North Sea and oil market conditions.

3. The impact of the North Sea on the Balance of Payments (BoP) of both Scotland and the remainder of the UK is also not straightforward. While Scotland’s trade balance would look very healthy, due to the export of oil and gas, much of this would be offset by a countervailing net outflow in terms of Interest, Profits and Dividends (IPD), relating to the North Sea related profits being repatriated abroad. In the case of the UK, while its trade balance would worsen considerably, this would be offset by both, an improvement in its IPD balance, as the North Sea related net outflow was reduced, and a reduction in its ‘overseas transfers’ balance, as the net transfer of public funds to Scotland came to an end. Again, the net position would depend on whatever the size of future, unknown, North Sea tax revenues was.

(1) The Scottish Government quote a simplified estimate for the value of the remaining North Sea reserves which excludes all associated costs of getting the refined oil and gas to market, principally the costs of extraction, any financing charges and the costs associated with distribution. A recent ONS (2013) report estimated the net present value (i.e. valued in today’s prices) of North Sea oil and gas reserves that includes such costs, as equivalent to £120 billion.

15 See CPPR paper ‘Measuring an independent Scotland’s economic performance’, for much more on this subject.
Annex 2 – Issues arising from rising oil price scenarios

While future rises in the oil price may be generally viewed as having a positive impact on the taxes accruing to a Scottish (or indeed and UK) Exchequer, in fact the final impact is quite difficult to predict.

In particular it is difficult to predict the degree to which a rising oil price will convert into higher taxable North Sea profits as this will, in turn, depend on whether the rising price is demand led, e.g., as a result of faster world growth, or cost driven. In the former case taxable profits should also rise. However, if the increase is largely due to rising costs, as the oil becomes more expensive to extract due to rising maintenance or labour costs, for example, then profit margins may not increase and taxable profits may not rise, indeed they may fall.

Where not taken directly from an alternative source (e.g., OBR) the scenarios shown in this paper are based on tax revenues moving proportionally with higher/lower prices and/or production levels.

In fact there are a number of further potential knock on impacts on the wider economy from higher/lower oil prices which are discussed in the academic literature as well as by OBR (see ‘Assessment of the effect of Oil Price Fluctuations on the Public Finances’, 2010).
Annex 3 – Oil prices

Table 1: Oil price projections (Brent or average Brent, Dubai & WTI), $ per barrel, nominal & 2011 prices

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Chart 1: Sterling and Dollar Brent oil prices per barrel, (nominal prices)

Source: EIA
References


ONS (2013) – ‘Monetary Valuation of UK Continental Shelf Oil & Gas Reserves, (June 2013)


