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Centre for Public Policy for Regions

CPPR Briefing Paper

FINANCIAL IMPLICATIONS OF DIFFERENT FISCAL ARRANGEMENTS FOR SCOTLAND

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John McLaren
Jo Armstrong
Richard Harris

Executive Summary

This report concentrates on projecting forward Scotland's fiscal balance in line with the methodology followed in the GERS publication. It uses GERS 2011 data up to 2009-10 and then Budget 2011 projections for the UK and constant shares of UK expenditure and revenues to estimate Scotland's future balance.

The calculations show that post 2009-10:

- ***including North Sea tax revenues***, Scotland's position reflects the shifting fortunes of the oil price; projected future prices suggests that a fully fiscally autonomous Scotland would have a lower fiscal deficit than the UK, by up to 3% of GDP, although this advantage all but disappears by 2015-16;

- ***excluding North Sea tax revenues***, Scotland has a higher fiscal deficit than the UK, amounting to a fairly constant 6-7% of GDP;

- the position including North Sea tax revenues is heavily dependent on issues around oil and gas prices, oil and gas production levels and the taxation regime. For example, if the HM Treasury/OBR assumptions and projections from the Pre Budget Report had been used then there would have been little difference between the Scottish and UK deficit positions (as a % of GDP).

Up to 2015-16 there is little prospect of any fiscal surplus arising in Scotland, which makes the case for creating an ***'Oil Fund'*** largely redundant. However, if 50% of North Sea tax revenues were saved as part of an 'Oil Fund', post 2013-14, and 50% used to fund public spending commitments in the budget of the same year, the short-term impact would be a worsening of the Scottish fiscal deficit, worth around 3% of GDP.

Current UK revenue and expenditure prospects suggest that if the ***Scotland Bill*** changes to funding were to apply over the period to 2015-16 then this is likely to improve the level of funding received by the Scottish Government, in comparison to continuing with the Barnett Formula.

HM Treasury/OBR now project ***North Sea tax revenues*** will amount to almost £65 billion between 2010-11 and 2015-16 (09-10 prices). This outlook is driven by high real oil prices and continued weak £/$ exchange rate whilst production is expected to continue to decline. Basing future Scottish long-term public sector spending on continued high levels of tax revenues from the North Sea would need to be very carefully planned, given the large variability in price and trend decline in production.

The official data that is available to help assess the potential pros and cons of greater fiscal autonomy remains seriously limited. As a result, the projections shown in this paper should be read as indicative rather than definitive.

Introduction

This Briefing Note was originally issued during the Scottish 2011 election campaign. It has now been updated to include the latest data published in the 2011 edition of Government Expenditures and Revenues for Scotland (GERS).

The following calculations aim to offer a useful insight into what the relative fiscal balances of Scotland might be up to 2011 given the currently available supporting evidence namely, the Office for Budget Responsibility's 2011 Budget Report and the GERS 2011 report.

Definitive evidence does not exist due in part to the on-going potential for changes to Government policy in both Scotland and the UK, and in part to the uncertainty over who owns North Sea oil production and the path for international oil prices.

Our report looks at the actual fiscal balance[1] (i.e. including capital) for the UK and Scotland rather than the current balance, as the former reflects better the international measure that is typically used in this area of analysis. It also looks at both Scotland's absolute fiscal position and also its position relative to the UK.

Revenue and Expenditure balance 2005-06 to 2009-10

The net balance between the UK and the Scottish government's total revenues and expenditures (i.e. the fiscal balance) for the five years 2005-06 to 2009-10, as given in GERS 2011, are outlined in Tables 1a (UK) and 1b (Scotland).

These show that **including North Sea revenues**:

- the fiscal balance of both jurisdictions has been negative throughout the period 2005-06 to 2009-10[2];

- when North Sea Revenues are low (ie, in 2009-10), Scotland's deficit (as a % of GDP) has been relatively higher than the UK's, but, not surprisingly, when the oil price is relatively high, Scotland's fiscal position is better than the UK's.

[1] The fiscal balance is the net financial position of the government after gross expenditure is taken away from gross revenues, i.e. if gross revenues are greater than gross expenditure then there is a fiscal surplus, if expenditure is greater than revenues then there is a net deficit.

[2] The 2009-10 fiscal balance for Scotland is slightly better than had been predicted in our April paper as Scottish Expenditure, as a share of UK expenditure, fell a little below its past 5 year average. As a result of this lower Expenditure, the Scottish Fiscal Balance improved by around 0.5% of GDP, from -11.1% to -10.6%. This does not affect future projections which are still based on the 5 year average of Scottish Expenditure as a share of UK expenditure.

Table 1a: United Kingdom fiscal balance, ACTUAL, £billion, nominal prices

	2005-06	2006-07	2007-08	2008-09	2009-10
Government Revenues	486.6	519.2	548.8	533.2	513.2
Government Expenditure	524	550.1	582.5	629.6	669.7
Balance inc North Sea revenues	-37.4	-30.9	-33.7	-96.4	-156.5
North Sea revenues	9.4	8.9	7.5	12.9	6.5
Balance exc North Sea revenues	-46.8	-39.8	-41.2	-109.3	-163
Balance inc N.S as a % of GDP	-2.9%	-2.3%	-2.4%	-6.7%	-11.1%
Balance exc N.S. as a % of GDP	-3.8%	-3.0%	-2.9%	-7.8%	-11.8%

Sources: OBR / HM Treasury Budget 2011; GERS 2011

Table 1b: Scotland fiscal balance, ACTUAL, £billion, nominal prices

	2005-06	2006-07	2007-08	2008-09	2009-10
Scottish Government Revenues	39.8	42.3	45.0	43.1	42.2
Scottish Government Expenditure	50	52.7	55.8	58.9	62.1
Balance exc North Sea revenues	-10.1	-10.4	-10.8	-15.8	-19.9
North Sea revenues	8.0	7.5	7.1	11.7	5.9
Balance inc North Sea revenues	-2.1	-2.9	-3.7	-4.0	-14.0
Balance inc N.S. as a % of GDP	-1.7%	-2.3%	-2.6%	-2.9%	-10.6%
Balance exc N.S. as a % of GDP	-10.1%	-9.8%	-9.4%	-13.7%	-17.8%

Sources: GERS 2011

Including North Sea revenues[3] highlights the significant variability for Scotland of government revenues that are reliant on the fortunes of international oil prices.

Excluding North Sea revenues, shows that Scotland has a noticeably higher fiscal deficit than the UK, worth around an extra 6-7% of GDP.

Revenue and Expenditure balance post 2009-10

Tables 2a and 2b show estimates of the fiscal balance position for the UK and Scotland, from 2010-11 to 2015-16 (details on how these figures are arrived at can be found in the Annex.)

[3] See Annex for details on how such revenues are assumed to be distributed across the UK.

Table 2a: United Kingdom fiscal balance, FORECAST, £billion, nominal prices

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Government Revenues	548.5	588.6	619.7	660.3	697.5	734.5
Government Expenditure	694.4	710.4	720.2	730.1	743.6	763.8
Balance inc North Sea revenues*	-145.9	-121.8	-100.5	-69.8	-46.1	-29.3
North Sea revenues	8.8	13.4	12.8	11.9	12.1	11.1
Balance exc North Sea revenues	-154.7	-135.2	-113.3	-81.7	-58.2	-40.4
Balance inc N.S. as a % of GDP	-9.9%	-7.9%	-6.2%	-4.1%	-2.5%	-1.5%
Balance exc N.S. as a % of GDP	-10.7%	-8.9%	-7.1%	-4.9%	-3.3%	-2.2%

Source: OBR / HM Treasury Budget 2011; GERS 2010; CPPR projections

Table 2b: Scotland fiscal balance, FORECAST, £billion, nominal prices

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Scottish Government Revenues	44.8	47.7	50.4	53.8	56.9	60.0
Scottish Government Expenditure	66.0	67.5	68.4	69.4	70.6	72.6
Balance exc North Sea revenues	-21.2	-19.7	-18.0	-15.5	-13.8	-12.5
North Sea revenues	7.9	12.1	11.5	10.7	10.9	10.0
Balance inc North Sea revenues	-13.3	-7.7	-6.5	-4.8	-2.9	-2.5
Balance inc N.S. as a % of GDP	-9.0%	-5.0%	-4.0%	-2.8%	-1.6%	-1.3%
Balance exc N.S. as a % of GDP	-17.8%	-15.9%	-13.8%	-11.2%	-9.4%	-8.1%

Source: OBR / HM Treasury Budget 2011; GERS 2010; CPPR projections

The tables show that:

- ***including oil revenues***, the Scottish fiscal deficit position is equal to, or better than, the UK's, by up to 3 percentage points of GDP. However, any such advantage has largely disappeared by 2015-16, due to declining North Sea production levels;

- the importance of North Sea oil revenues to these future relative positions is vital; had the Pre-Budget Report projections from late 2010 been used, instead of this year's Budget projections, there would have been little difference between the Scottish and UK deficit positions;

- ***excluding oil revenues***, the Scottish position continues to be relatively worse than for the UK, by 6-7% of GDP post 2009-10.

The preceding Tables 2a-b show how a fiscally autonomous Scotland's fiscal balance would compare with the UK's up to 2015-16. They show that Scotland's fiscal deficit is slightly lower than the UK's as a whole, due to predicted high oil revenues. The implication is that as Scotland has a slightly lower fiscal deficit (as a % of GDP) it would have a little more wriggle room to adjust taxes down or expenditure up and still have the same relative deficit as the UK.

North Sea tax revenues

North Sea tax revenue depends on a number of variables: the dollar price for crude; the sterling/dollar exchange rate; the sterling price for gas; and annual oil and gas production levels[4].

As Figure 1 shows, the real (2009-10 prices) dollar price of oil has varied significantly in the last 40 years with a low of $16.50 in 1998 and an all time high $118 in 1979, a range of over $100 per barrel. The 2011 average is close to the top of this range at $96 per barrel. In sterling terms, the range has been a little less marked with a real terms low of £9.33 in 1971 whilst the highest average real sterling price was just under £60 in 1984. The average so far for 2011 is around £57 per barrel. Thus the variation in real sterling oil prices has been a range of around £50. The relatively high sterling price currently being experienced is due to the 20% average depreciation of sterling against the dollar between 2007 and 2011. If the exchange rate had remained at the average for 2007 (ie, $1.99/£) then the average £ price per barrel would have been £10 lower, i.e. £50 per barrel.

The sterling price for gas has shown similar variations. However, as Figure 2 highlights, the real price index is now less than 7% above its 2005 level and is 9% below that achieved in 2009; this contrasts with the sterling real oil price index for the same period[5], which has risen 40% in real terms since 2005 and is up almost 30% since 2009.

Notwithstanding these varying fortunes, North Sea tax revenues are projected to bounce back from the relatively low level of £6.5 billion recorded in 2009-10 and remain high for the remainder of the next spending review i.e., to 2015-16 (See Figure 3). In the 6 years, 2010-11 to 2015-16, HM Treasury projects total oil and gas revenues will amount to just under £64 billion (2009-10 prices). This is well below what was raised in the peak decade of the 1980s (where over £155 billion of oil and gas taxes were paid) but would be almost as much as was paid in the whole of the last decade (i.e. 2000-2009).

This near record high tax haul is highly dependent on the projected oil price. HM Treasury assume an oil price up to 2015-16 of between £55 and £64 per barrel (2009-10 prices). HM Treasury is therefore assuming international oil prices will remain relatively high in real terms throughout the spending review period and the dollar/sterling exchange rate will remain at or around $1.63 per £. For almost half of the period since 2000 the average $/£ exchange rate has been higher than $1.63/£. A key risk for these North Sea tax revenues therefore must be not only the $ price per barrel but also sustained sterling appreciation against the dollar.

The final key factor in driving tax revenues is the projected level of production anticipated from the UK North Sea (see Figure 4). Since 1999, oil and gas production has been on a downward trend. Oil has fallen 50%, from an annual average of 2.9 million barrels of oil per day (bpd) to 1.44 million bpd in 2009. Gas production peaked one year later, since when it has fallen 45% on average, from 108 billion cubic meters per day (bcmd) to 60 bcmd.

The downward trend in North Sea production is the key factor driving tax revenues, not least because production costs in this province keep rising. Even with higher oil prices and a £/$

[4] An earlier CPPR paper outlines the importance over time of gas production and prices in determining North Sea tax revenues and the debate around the share of such revenues residing Scottish waters. See http://www.cppr.ac.uk/media/media_86366_en.pdf

[5] The most up to date gas index data are to 2010 q4.

exchange rate that suits the sector (i.e. sterling remaining weak against the dollar), the potential to secure yet more tax revenues from the North Sea is contentious.

The Scottish Government suggests additional taxes from the North Sea should not only be triggered by high and rising oil and gas prices (dollar or sterling). It accepts that, given the maturity of the sector, taxation needs to be more nuanced. For example, it proposes setting a minimum rate of return cap before more taxes should be paid. This clearly signals that even with higher prices, there is now a real trade-off between raising higher North Sea tax revenues and having incentives that anchors the sector in Scotland for the foreseeable future.

Any country which relies heavily on a natural resource revenue stream, such as oil, requires very careful and effective contingency planning in order to cope with the potential for extreme revenue volatility.

Creating a Scottish Oil Fund under current circumstances

Up to 2015-16 there is little prospect of any absolute fiscal surplus arising in Scotland, which makes the case for creating an 'Oil (or 'Futures') Fund' largely redundant. However, it is an interesting exercise to calculate what difference to the deficit the building up of such a Fund might make.

The previous calculations have assumed that all North Sea revenues are used contemporaneously to help balance the government's fiscal budget. However, the Scottish Government has discussed the possibility of saving a proportion of each year's North Sea revenues to build an 'Oil Fund'. The intention being that this would grow over time and that more and more of the government's North Sea related revenues would then come from interest on these savings rather than directly from taxed output.

Table 3 shows the short term impact on Scotland's fiscal balance assuming 50% of North Sea revenues were to be allocated to such a Fund, with the remaining 50% being used to support annual public sector spending.

Table 3: Scotland fiscal balance with 50% Oil Fund, FORECAST, £billion, nominal prices

	2010-11	**2011-12**	**2012-13**	***2013-14****	***2014-15***	***2015-16***
Scottish Government Revenues	44.8	47.7	50.4	*53.8*	*56.9*	*60*
Scottish Government Expenditure	66	67.5	68.4	*69.4*	*70.6*	*72.6*
Balance exc North Sea revenues	-21.2	-19.7	-18.0	*-15.5*	*-13.8*	*-12.5*
North Sea revenues	7.9	12.1	11.5	*5.4*	*5.4*	*5.0*
Balance inc North Sea revenues	-13.3	-7.7	-6.5	*-10.1*	*-8.4*	*-7.5*
Balance inc N.S. as a % of GDP	-9.0%	-5.0%	-4.0%	*-6.0%*	*-4.7%*	*-4.0%*
Balance exc N.S. as a % of GDP	-17.8%	-15.9%	-13.8%	*-11.2%*	*-9.4%*	*-8.1%*

** North Sea revenues are only 50% of the total Scottish share from 2013-14 onwards*

Source: OBR / HM Treasury Budget 2011; GERS 2011; CPPR projections

Not surprisingly, allocating 50% of North Sea revenues to an Oil Fund would lead to a worsening of Scotland's fiscal balance. If the fund were to be inaugurated in 2013-14 it would initially worsen Scotland's deficit by around 3 percentage points of GDP. In the longer term, it is anticipated that such a decline in fiscal fortunes would be offset by increasing interest income from the Oil Fund.

Under current projections of repeated fiscal deficits for Scotland, the accumulation of an Oil Fund could still be possible but only if spending on public services were to be significantly reduced, or taxes raised. Such an adjustment might start to be reversed as and when the interest received on the fund grew.

Potential impact of the Scotland Bill on Scotland's fiscal balance

If the Scotland Bill is implemented it will not take effect until 2016, which is at the very end of the time period looked at here. However, it is again interesting to look at what would have happened over the period we are considering here, purely for illustrative purposes.

As the preceding Tables have shown, up to 2015-16 a fiscally autonomous Scotland's fiscal deficit is slightly lower than the UK's as a whole, due to high oil revenues. The implications for the Scottish government budget of this is that Scotland could potentially increase its budget, a little, and still be in the same relative fiscal balance position as the UK.

However, the more realistic political option over changing how Scotland's finances work in the near future is presented by the Scotland Bill. The choice this presents is between staying part of the UK's funding position, via the continued operation of the Barnett Formula, or moving to one part funded by income tax revenues raised in Scotland.

The main issue of interest here then is whether Scottish public finances would have increased faster or slower under the new system than under the existing Barnett system. This in turn depends on whether income tax revenues (principally) are rising faster or slower than total UK government expenditure.

Table 4 shows these relative growth rates up to 2015-16.

Table 4: Projected growth rates in key UK revenue and expenditure measures (%)

	2011-12	2012-13	2013-14	2014-15	2015-16	Total
Income Tax	4	5	8 ½	6 ¾	6 ½	35
TME	2 ¼	1 ½	1 ½	2	2 ¾	10

Source: OBR / HM Treasury Budget 2011

Over this period Scotland's income tax receipts are projected to grow by 35% whilst expenditures will rise by just 10% in the same five years. The Scotland Bill scrutiny process highlighted the difference of views on what Scotland's overall revenue position might be under the new tax proposals. Historic analysis supports the view that Scotland would have been worse-off. However, as Table 4 illustrates, if Scotland's income tax revenues are as projected, the overall financial settlement for Scotland under the proposed new system could well turn out to be better than under the current Barnett arrangements.

Going beyond GERS - Revenue and Expenditure options and faster economic growth

The previous calculations look at Scotland's fiscal balance using a 'static' analysis that could be augmented by a more 'dynamic' one. A more autonomous Scotland could decide to alter the revenue and /or expenditure side of the fiscal equation.

On the expenditure side[6], it might amend the size of the budget currently spent by the Scottish Government, or by the UK Government on its behalf. For example, a fiscally independent Scotland might choose to reduce its implied share of UK defence spending, by removing Trident and/or scaling up/down conventional armed forces. Another area of UK-

[6] These expenditure changes ignore the possible one-off and on-going expenditure pressures resulting from the need to set up separate Scottish institutions in the event of independence or the on-going loss of economies of scale.

led spending is on benefits (pensions, unemployment etc). Again here, a choice could be made to cut, or raise, some of these benefit levels. On the revenue side, all of the major tax sources (income tax, corporation tax, hydrocarbons tax, VAT etc) are open for reassessment in terms of the rates at which they are levied.

The most palatable way of closing any fiscal gap would be for Scotland to achieve higher growth. This would provide Scotland with the opportunity to generate increased tax revenues for funding more public spending (again assuming public spend as a share of GDP remains fixed), and/or to allow for a faster reduction in public debt levels. However, Scotland is highly integrated into the UK economy (responding pretty much the same to demand- and supply-side shocks), so consistently outperforming the UK, by more than a small fraction of a percentage point, seems unlikely.

For some, the most likely way for higher economic growth is if there is some 'step-change' in productivity (i.e. efficiency or innovativeness) through Scotland having greater control of its own financial affairs. However, in order to factor this in we would need far greater evidence as to how and why this might come about than currently exists.

The obvious alternative to this 'step change' argument is to increase the underlying growth rate through improving skills, infrastructure and innovation[7].

Knowns and Unknowns

The previous calculations have highlighted a number of elements that are important in the understanding of this subject.

On the 'Knowns' side:

- the greater variability in Scotland's net fiscal position should it rely on North Sea revenues to part fund its current public spending

- the relatively poorer fiscal balance in Scotland (versus the UK) without North Sea revenues

However, these 'Knowns' are clearly dominated by the 'Unknowns':

- the (dollar and sterling) oil price as well as levels of North Sea output

- Scotland's share of such North Sea oil (and gas) production

- the future performance of a more autonomous Scottish economy

- the shape/pattern of Scottish Government revenues and expenditures

- the size of Scotland's share of UK public debt, with or without the current Bank bailouts included

[7] See an earlier CPPR paper 'Reflections on Sources of Scottish Economic Growth' in http://www.cppr.ac.uk/centres/cppr/newsandevents/

Conclusions

This report has illustrated the many difficulties inherent in calculating the fiscal prospects of a more autonomous Scotland. The potential deficit up to 2015-16 depends on a variety of factors such as: Scotland's share of North Sea and other tax revenues; oil & gas prices; oil & gas production levels; and public sector expenditure levels. Few of these would be under the control of a future Scottish Government.

The results imply that under each of the circumstances considered Scotland will, along with the UK, face a difficult period of adjustment in moving away from high, to more manageable, fiscal deficits (or even a surplus).

If current high oil prices were to be maintained the adjustment needed by Scotland might well be ameliorated under conditions of full fiscal autonomy or independence. However, this potential positive would bring with it significant additional risks. As the extreme volatility of oil prices in only the last three years has demonstrated, public spending increasingly supported by oil revenues will need very careful management.

As far as the Scotland Bill is concerned, the next five years would appear to favour the new system, which partly replaces a grant set by the Barnett Formula with income tax based revenues, over the existing Barnett Formula system. However, the position post 2016, when any such new system would be introduced, is very difficult to predict.

As we have highlighted already, the available official data on Scotland's public sector expenditures and revenues, and clarity on the preferred future spending and tax raising policies needed to assess the potential pros and cons of greater fiscal autonomy remain seriously limited. Hence, the projections shown in this paper should be read as indicative rather than definitive.

Annex
Details on data and calculations for all tables

A. UK

2005-06 to 2009-10

- UK Government revenue total taken from ONS data series
- UK Government expenditure (TME) total taken from PESA table 1.1
- GDP (including extra regio) taken from ONS data series
- North Sea Revenues taken from GERS 2011
- Extra-regio GDP provided by Scottish Government statisticians

2010-11 to 2015-16

- UK Government revenue total taken from Budget Report (BR) table B13
- UK Government expenditure (TME) total taken from BR table B13
- GDP (including extra regio) taken from BR table B1
- North Sea Revenues taken from BR tables B10 and B11
- Extra-regio GDP estimated by CPPR as a constant (2%) share[8] of UK GDP

B. Scotland

2005-06 to 2009-10

All Scottish Government revenue and expenditure data taken from Government Expenditure and Revenue Statement (GERS) 2011

2009-10 to 2015-16

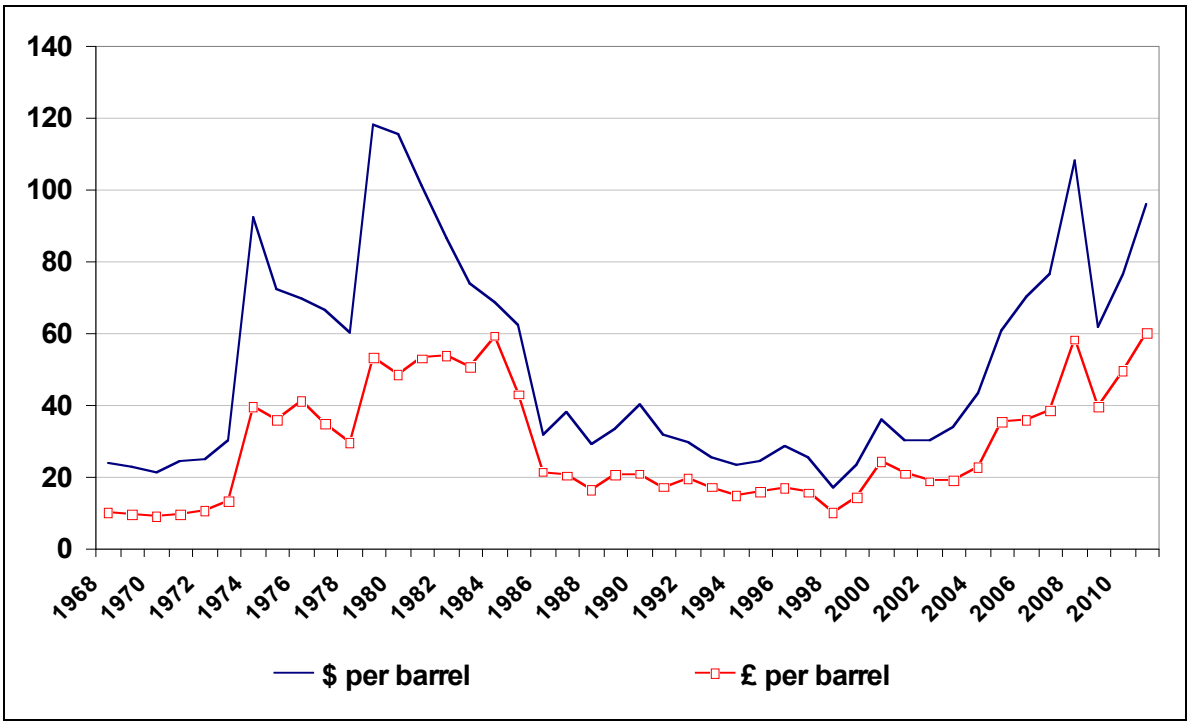
- Scottish Government revenue total calculated as a constant share (8.3%) of UK revenues (excluding North Sea revenues)
- Scottish Government expenditure total calculated as a constant share (9.5%) of UK expenditure
- GDP (excluding extra regio) calculated using same growth as for UK GDP (excluding extra regio). GDP (including extra regio) estimated by adding on a constant (90%) share of UK extra regio GDP
- North Sea revenue calculated as constant share (90%) of UK total from 2010-11 onwards.

C Oil Fund estimates - 2013-14 onwards

50% of the Scottish share of oil revenues only are used to calculate the fiscal balance, the other 50% going towards the start of the building up of an Oil Fund.

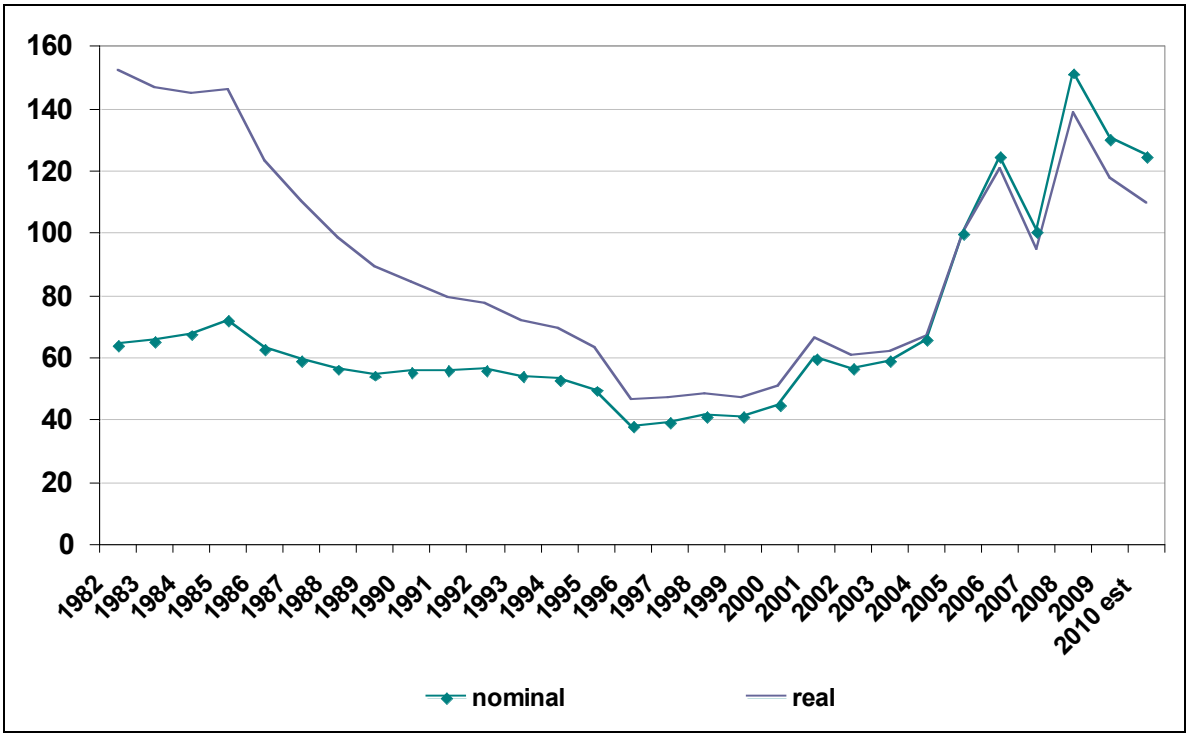
[8] Note: all of the constant shares (with respect to extra regio GDP and the Scottish share of UK revenues, expenditure and NS revenue) used for projections post 2009-10 are based on an average of the shares over the period 2005-06 to 2009-10. These shares show a relatively small degree of variation over this period so using a central estimate should provide a good guide to future shares. The only exception to this general rule is North Sea GDP forecasts, which are difficult to predict. The impact of this uncertainty on the fiscal balance as a share of GDP will be negligible for the UK but could have a greater impact on Scotland, particularly in high oil price years.

Figure 1: Oil prices, 2009-10 prices



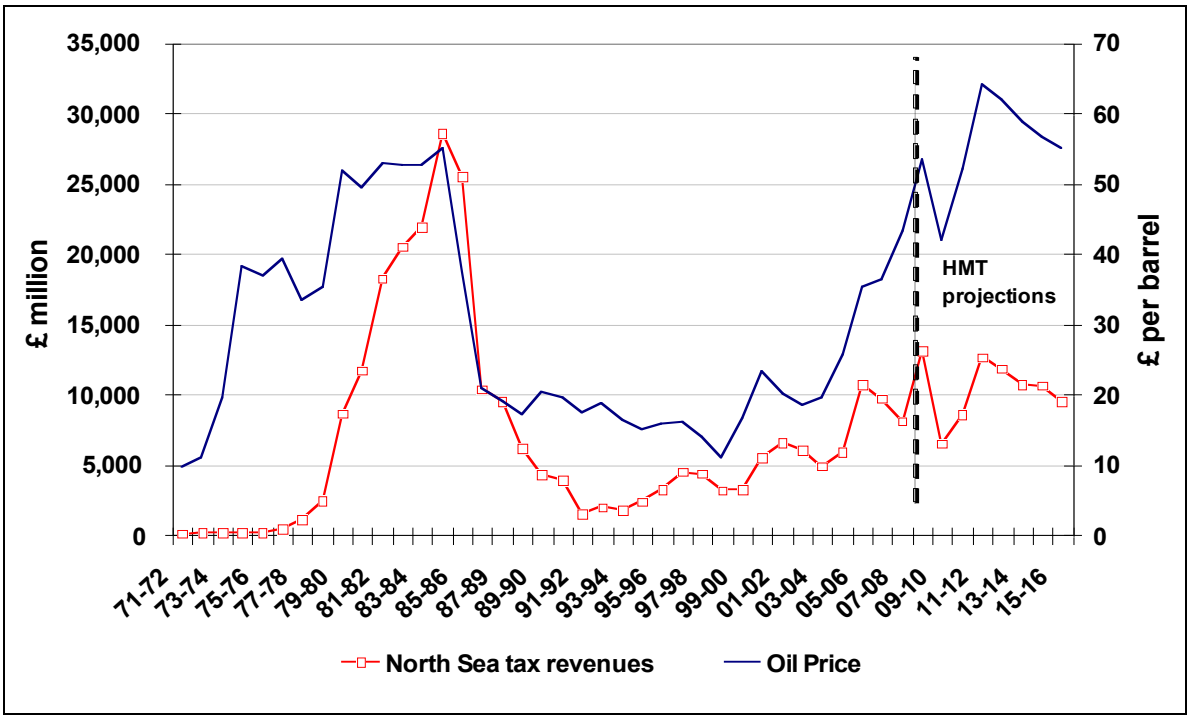
Source: EIA; ONS

Figure 2: UK Gas price index for Industrial users (ex climate change levy), 2005=100



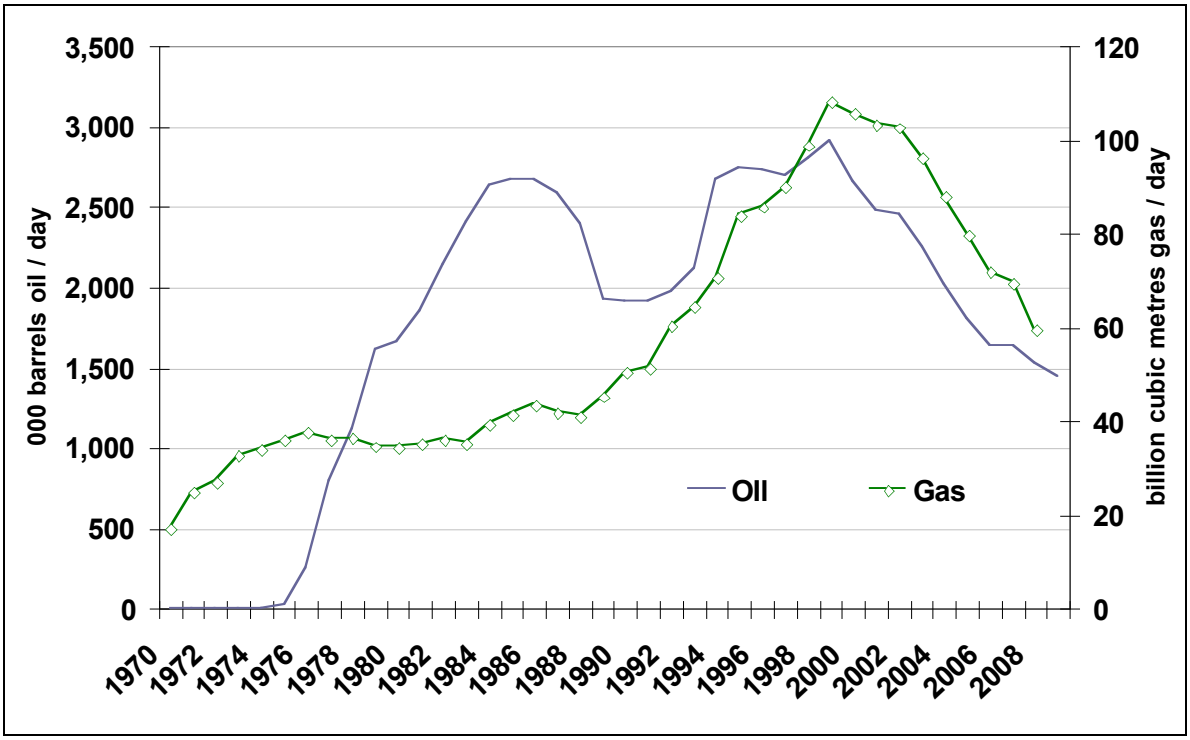
Source: DECC, Energy Trends

Figure 3: North Sea tax revenues and oil prices, 2009-10 prices



Source: HMRC;EIA, ONS

Figure 4: North Sea production



Source: DECC