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Monthly Bulletin Supplement: Analysis of the Scottish Government's latest 'Oil and Gas Analytical Bulletin' (OGAB)

The Scottish government's latest Oil and Gas Analytical Bulletin (OGAB) (1) now reflects the lower oil price landscape that has been evident since last Autumn. As a result, scenarios for Scottish North Sea tax revenues (or receipts) have been subjected to substantial downward revisions since the last estimates made in May 2014.

For example, for the financial year 2018-19, the previous edition projected a range from £3.2 billion to £8 billion, whereas the latest edition has a range from £0.7 billion to £2.8 billion.

This analysis looks at the assumptions underlying the different scenarios outlined in the Scottish government's latest (third) publication, the key changes in relation to the previous OGAB, the main results and recommendations for changes to improve it.

Main assumptions used in the Scottish government tax receipts scenario projections

There are 5 scenarios outlined, with the basic assumptions used for each outlined in Table A1 of the report.

These key assumptions are:

- Scenario 1 - in line with the Office for Budget responsibility (OBR) forecasts, i.e. an oil price of approximately \$70 a barrel and production falling by 4-5% a year
- Scenario 2 – an oil price of approximately \$70 a barrel BUT with production rising by 3-4% a year (in line with Oil and Gas UK's central projection)
- Scenario 3 - as Scenario 1, BUT with a phased 30% improvement in efficiency reducing costs
- Scenario 4 - a combination of the changes noted in Scenario 2 AND Scenario 3
- Scenario 5 - as Scenario 4, BUT with a higher oil price of \$100

Table 1 illustrates the maximum and minimum range of Scottish North Sea revenues that result from using these assumptions. It also shows the difference in the range of tax revenue results in comparison to previous editions of OGAB.

There are only two years which all three editions cover, 2016-17 and 2017-18, and both years reflect that the projected tax revenue range has been declining over time, in line with falling prices and production levels.

Table 1: Scotland’s overall fiscal balance, using Scottish government North Sea tax receipts projections (lowest & highest scenarios), £ billion (cash)

		2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Edition									
June 2015	Max	-	-	-	-	2.8	2.3	2.8	2.8
	Min	-	-	-	-	0.5	0.6	0.7	0.6
May 2014	Max	-	-	5.6	9.0	7.8	8.3	8.0	n/a
	Min	-	-	3.3	3.4	2.9	3.1	3.2	n/a
March 2013	Max	7.2	8.3	9.4	9.7	10.7	11.8	n/a	n/a
	Min	6.7	6.2	5.5	4.5	4.2	4.1	n/a	n/a
Out-turn		5.2	4.0	1.9	n/a	n/a	n/a	n/a	n/a

Sources: OGAB (2013, 2014, 2015); SNAP Quarterly National Accounts Scotland, 2015 Q1.

Main changes between publications

The key differences to the previous edition of OGAB are:

- There are now 5 scenarios instead of 6.
- The previous Scenarios 4, 5 and 6 are no longer used, which means that:
 - Use of the higher O&G UK’s estimate of production has been dropped.
 - Use of the O&G UK’s estimate future investment to estimate production has been dropped.
 - Use of DECC’s central price estimate has been dropped.
- Scotland’s share of the UK total is now 85%, based on an average of the past 3 years, as opposed to 90%, based on an average of the previous 5 years.
- For the first time no forecast for Scotland’s share of the revenues for the current year (i.e. 2015-16 in the latest edition) has been made.
- All oil price projections used in the scenarios are based on OBR sourced variants.

The main impact of these changes has been to significantly reduce both the level and spread (ie, full range of results) of the tax revenue projections made. For example, for 2018-19 the maximum level has fallen from £8 billion to £2.8 billion, the minimum level from £3.2 billion to £0.7 billion and the spread (between minimum and maximum values) from £4.8 billion to £2.1 billion.

The main implication of the reduction in the revenues spread is that even if higher production, improved cost efficiency or higher price (or all three) were to arise, each would add only £0.6, £0.3 and £1.1 billion respectively (or, if all three improvements occur, worth £2.2 billion) to Scottish oil and gas revenues in 2019-20.

The shift in impact with regards to a higher price is particularly noticeable. In last year's OGAB the impact of a rise of \$8 in the oil price (i.e when moving from Scenario 3 to Scenario 6 for 2015-16) led to an increase in revenues of £1.6 billion. In this year's OGAB, the impact of a \$30 rise in the oil price (i.e when moving from Scenario 4 to Scenario 5 for 2016-17) sees a similar, £1.7 billion, increase in revenues (although this drops down to £1.1 billion the following year).

Scottish government officials have explained that this, almost four fold, increase in the change in the oil price needed to have the same impact on Scottish North Sea revenues is in part due to changes in the tax regime and to decommissioning costs. However, as the detailed workings of the model used in OGAB are not provided at present, then a full explanation is difficult to provide.

This shift in the impact of a change in the oil price on revenues is an important finding as it illustrates that even with a return to \$100 a barrel, and significant operational efficiencies being gained, North Sea tax revenues are anticipated to remain at a relatively low level in comparison to previous projections made by the Scottish government.

Recommended changes

Each of the following adjustment to the OGAB could improve its quality and usefulness.

First, there is merit in introducing a 'lower than OBR' scenario. One thing that has become clear since the Scottish government started publishing these scenarios is that the OBR's North Sea revenue forecast for the UK does not appear to represent a true 'bottom of the range' estimate.

Table 1 shows that in each of the three financial years (2012-13 to 2014-15) where we now have an out-turn figure for North Sea revenues to compare with previous OGAB projections, this out-turn is lower, often considerably so, than the OBR projection (i.e. than the Scottish government's 'lowest' scenario).

A new 'low' Scenario 1 could, perhaps, be based on the OBR's low price variant used in their annual Fiscal Sustainability report. In this, the OBR adopts the US Energy Information Administration's (EIA) price projection variants, which includes both a high price of around \$130 per barrel in 2016 and a low price variant of around \$50 per barrel in 2016. (Note that these OBR/EIA forecasts acknowledge that, at the present time, the higher and lower variants are asymmetric around the central forecast, with greater scope on the upside than the down side, when the price was at or around the \$60 per barrel.)

Second, the use of \$100 per barrel by the Scottish government in its 'highest revenue scenario' may also be too cautious. As set out above, the EIA's higher price variant (\$130 in 2016), as utilised by the OBR, could be used instead.

Equally, on the production side, wider ranges could be used in the scenarios. The OGAB points to the recent, relatively large, Johan Sverdrup field discovery and development in the Norwegian sector of the North Sea as a sign of what could potentially happen in the UKCS in the future. However, although new discoveries and developments are still possible in the UKCS, their impact on incremental production on an annual basis remains difficult to forecast.

Third, it would be useful if a disaggregation of the impact of each change in the key assumptions on the total for North Sea revenues were given. For example, how much the falling price has contributed as opposed to changes in costs or production levels etc.

Fourth, OGAB should also acknowledge that a historically high or low price is unlikely to be sustainable over a long period of time, again based on the historic trends. This means that scenario projections are tricky, as it is notoriously difficult to predict the turning point(s) where the price explodes or collapses. Nevertheless, the pattern of rapid and large shifts in prices being the reality, it needs to be reflected in such forecasts. This might be done by emphasising the central projections, with an acknowledgement that such an average outcome over time may arise through an erratic revenue path.

Fifth, it may also be useful in future editions to reflect in greater detail on the potential impact on onshore tax receipts of changing conditions in the North Sea. While this will be even more difficult to do than for offshore prospects, it affects a very important part of the Scottish economy.

Furthermore, with the declining importance of North Sea revenues, OGAB might concentrate more on the continuing importance of the North Sea for Scottish jobs, both onshore and offshore, as well as on what measures might ensure continuing North Sea activity that would protect these jobs into the future.

Impact of recent price variation on North Sea tax revenue forecasts

The Scottish government's use of notably lower oil price assumptions in the latest set of OGAB scenarios, compared with last year, reflects a widely held view that the recent drop in oil prices signals a change in the oil and gas world environment.

The OECD/IEA (in its Medium Term Oil Market Report, February 2015) stated that *"the price collapse ...was neither wholly unexpected nor unprecedented"* and that *"the market rebalancing will likely occur relatively swiftly but will be comparatively limited in scope, with prices stabilising at levels higher than recent lows but substantially below the highs of the last three years."*

The governor of the Norges Bank stated in a recent speech (February 2015) - *"We must prepare ourselves for an environment of lower oil prices compared with the levels seen in recent years. It would be unwise to act on the assumption that oil prices will again settle around \$100pb."*

Most recently (June 2015), Deirdre Michie, chief executive of Oil & Gas UK, said that *"Over the last 20 years, the price (of oil) has averaged at \$62 (£39) per barrel and the forward curve is between \$65 and \$75. Therefore, it is not unreasonable for the North Sea to out its stall at being sustainable in a \$60 world."*

Impact of new revenue projections on Scotland's fiscal balance, 2014-15 to 2019-20

While full fiscal autonomy is not currently an option, it is still a much debated topic as the Scotland Bill proceeds through the UK Parliament. As such, we have updated our earlier analysis to highlight the impact of the Scottish government's North Sea scenario forecasts would have on Scotland's fiscal balance assuming full fiscal autonomy under current economic and fiscal policies.

Tables 2 and 3 in Annex 1 show the impact on Scotland's fiscal balance of using the alternative North Sea revenue scenarios from the latest OGAB. Rather than show all five scenarios we limit our presentation to the lowest (Table 2) and the highest (Table 3) North Sea revenue projections in OGAB.

The impact of using the Scottish government's **highest** estimate of North Sea revenue estimates (in comparison to the OBR's forecast), is to improve Scotland's absolute and relative (to the UK) fiscal deficit. However, Scotland's **Absolute Fiscal Balance** remains in deficit (by over £6 billion in 2019-20) and Scotland's **Relative Fiscal Balance** (in comparison to the UK) remains in a worse position (by 3.8 % of GDP in 2019-20).

It is also worth noting that, while Scottish North Sea revenues fall by more than £9 billion over the period 2011-12 to 2019-20, non-North Sea revenues are to forecast rise by more than £18 billion over the same period (in line with the rise in UK non oil revenues). As a result, Scotland continues to move back towards a balanced budget but more slowly than is the case for the UK.

End-note

(1) The delay in commenting on the latest edition, which was published in June, was due to Fiscal Affairs Scotland seeking clarification from officials on the underlying impact of a number of the key changes to assumptions.

Quotes:

John McLaren: *"The lower world oil price regime that currently exists is reflected in the Scottish government's lower North Sea receipts scenarios. Furthermore, the narrowing range of outcomes from these scenarios highlights the more limited impact that even a rise in the oil price back to \$100 a barrel would have."*

Jo Armstrong: *"The Scottish government's updated Oil and Gas Analytical Bulletin is to be welcomed. However, it does also reaffirm what we already of know about the declining importance of North Sea revenues. Future editions of the Bulletin could concentrate more on the continuing importance of the North Sea for Scottish jobs, as well as on what measures might ensure continuing North Sea activity that would protect these jobs."*



Contact details

John McLaren m: 07429 508 596
e: john.mclaren@btinternet.com

Jo Armstrong m: 07740 440 766
e: jo@jo-armstrong.co.uk

Charity details

Fiscal Affairs Scotland SCIO
SC044827

Website: fiscalaffairsscotland.co.uk

ANNEX 1

The following tables update those included in a Press Release of 11th March 2015 and now incorporate (i) the revised data published by the Office for Budget Responsibility at the time of the July 2015 Budget and, (ii) the latest edition of the Scottish government's projections for North Sea revenues.

(Revised) Table 2: Overall fiscal balance, Scotland and the UK, £ million (cash), using Scottish government Scenario 1 oil revenue projections (lowest, consistent with OBR)

	2014-15 out turn (i)	2015-16	2016-17	2017-18	2018-19	2019-20
SCOTLAND						
Onshore Revenues (ii)	51,672	54,294	57,425	60,042	62,814	65,763
Expenditure (ii)	68,255	68,886	70,000	71,271	72,783	74,649
Onshore Fiscal Balance	-16,583	-14,592	-12,575	-11,229	-9,969	-8,886
Scottish North Sea revenues (ii) (iii)	1,878	595	425	510	425	425
Overall Fiscal Balance	-14,705	-13,997	-12,150	-10,719	-9,544	-8,461
UK						
Overall Fiscal Balance	-89,100	-69,500	-43,100	-24,300	-6,400	10,000
Overall Fiscal Balance as % GDP (iv)						
Scotland	-9.6	-8.9	-7.4	-6.3	-5.4	-4.6
UK	-4.9	-3.7	-2.2	-1.2	-0.3	0.5
Difference	-4.7	-5.2	-5.2	-5.1	-5.1	-5.1
Overall Fiscal Balance, £ per head						
Scotland	-2,751	-2,609	-2,256	-1,982	-1,758	-1,552
UK	-1,381	-1,070	-659	-369	-97	150
Difference	-1,370	-1,539	-1,597	-1,613	-1,661	-1,702
Total Difference (£, million) (v)	-7,321	-8,255	-8,600	-8,722	-9,020	-9,278

Sources: All figures for the UK are taken from the latest OBR (July 2015) Economic and Fiscal Outlook estimates, Scottish figures are derived from the same source using the recent average Scottish shares of the UK totals.

Notes:

- (i) All data for 2014-15 is out turn, with the exception of Scottish Expenditure which is estimated as described in (ii).
- (ii) Scottish shares of UK onshore revenue, expenditure and North Sea revenue totals used are 8.08%, 9.28% and 85% respectively. Note that this 85% is consistent with that used by in the latest OGAB, whereas previous estimates by Fiscal Affairs Scotland had used a higher, 88%, share.
- (iii) North Sea revenues are consistent with forecasts published by the OBR at the time of the July UK Budget, which is marginally different to those used in OGAB (which were in line with OBR forecasts from March 2015), being £0.1 to £0.2 billion lower for each year post 2015-16.
- (iv) Offshore (North Sea) related GDP is estimated to be flat, at around its 2014-15 level, from 2015-16 onwards, in Table 2 and at its, higher, 2013-14 level, in Table 3.
- (v) This is the equivalent of the per head figure summed up across the population of Scotland.

(Revised) Table 3: Overall fiscal balance, Scotland and the UK, £million (cash), using Scottish government Scenario 5 oil revenue projections (highest)

	2014-15 out turn (i)	2015-16	2016-17	2017-18	2018-19	2019-20
SCOTLAND						
Onshore Revenues (ii)	51,672	54,294	57,425	60,042	62,814	65,763
Expenditure (ii)	68,255	68,886	70,000	71,271	72,783	74,649
Onshore Fiscal Balance	-16,583	-14,592	-12,575	-11,229	-9,969	-8,886
Scottish North Sea revenues (ii)	1,878	595	2,800	2,300	2,800	2,800
Overall Fiscal Balance	-14,705	-13,997	-9,775	-8,929	-7,169	-6,086
UK						
Overall Fiscal Balance	-89,100	-69,500	-40,306	-22,194	-3,606	12,794
Overall Fiscal Balance as % GDP (iv)						
Scotland	-9.6	-8.9	-5.7	-5.0	-3.9	-3.2
UK	-4.9	-3.7	-2.1	-1.1	-0.2	0.6
Difference	-4.7	-5.2	-3.6	-3.9	-3.7	-3.8
Overall Fiscal Balance, £ per head						
Scotland	-2,751	-2,609	-1,815	-1,651	-1,321	-1,116
UK	-1,381	-1,070	-616	-337	-54	192
Difference	-1,370	-1,539	-1,199	-1,314	-1,267	-1,308
Total Difference (£, million) (v)	-7,321	-8,255	-6,555	-7,105	-6,874	-7,131

Sources: As Table 2, except oil revenues which are in line with those published in the latest OGAB, Scenario 5.

Notes: As Table 2.