

<b>Institution:</b> University of Aberdeen
<b>Unit of Assessment:</b> UoA18: Economics and Econometrics
<b>Title of case study:</b> Economics of Constitutional Change in Scotland.
<p><b>1. Summary of the impact</b></p> <p>University of Aberdeen research into financial and economic relations between Westminster and Scotland has informed public debate concerning Scottish Constitutional Change and influenced Scottish and UK policy makers in light of Devolution in 1999 and the Independence Referendum in 2014.</p> <p>Impact emerged through two main channels: First, through UK Continental Shelf (UKCS) research investigating the nature and extent of shares of investment, production, gross revenues and UK treasury tax revenues attributable to an independent Scottish parliament. Second, through accurate research information about the Barnett formula's post-devolution role in fiscal transfers between Westminster and Scotland.</p>
<p><b>2. Underpinning research</b></p> <p>Research demonstrating the economic importance of the UK oil and gas industry on constitutional change debate has been undertaken by Alex Kemp (Professor), Linda Stephen (Research Fellow), and Sola Kasim (Research Fellow) since 1999. It is complemented by research relevant to Scottish devolution elsewhere within the University of Aberdeen Business School, such as work by David Heald (Professor of Accountancy - submitted under UoA19) on the Barnett formula and constitutional change.</p> <p>The paper by Kemp and Stephen (1999) used financial simulation modelling, and produced estimates of the investment and operating expenditures, gross revenues, and tax revenues for the hypothetical Scottish sector of the UK Continental Shelf since the mid-1970s. This involved the designation of a dividing line in the North Sea between the Scottish and rest of UK sectors, as well as the incorporation of complex tax arrangements for offshore oil and gas and allocations of various non-field specific costs to the two sectors.</p> <p>Understanding the economics of the North Sea oil sector is essential to produce reliable estimates of the hypothetical Scottish shares. This was enhanced by the paper by Kemp and Kasim (2006) which developed an econometric model that highlighted the different characteristics of the five main geographic regions of the UK Continental Shelf (UKCS). Kemp and Stephen (2008) used financial simulation modelling to estimate the hypothetical Scottish shares of expenditures and revenues, the quality of which was enhanced by the earlier econometric modelling by Kemp and Kasim. Findings emphasised (1) the relatively large tax revenues which would have accrued to a Scottish government, but also (2) their extreme volatility. With an inevitable decline in the longer term, the implications are that an independent Scottish government should be wary of relying substantially on North Sea oil revenues for normal budget purposes. The research concluded that borrowing rights and an Oil Fund (i.e. a fund separated from normal government revenues and expenditures) are desirable to handle the volatility of the revenues. The research over the years was conducted with the aid of sponsorship from the Scottish Government, a group of oil companies and Scottish Enterprise.</p> <p>A further issue central to the constitutional debate is the evolving role of the Barnett formula. Heald's Barnett formula expertise is widely acknowledged, as reflected in the House of Commons Justice Committee - Fifth Report (2009) which points out that it was Heald who initially coined the phrase 'Barnett formula'. His publications on devolution and the formula are numerous. Of interest in this context is a paper, stemming from an ESRC funded project undertaken in Aberdeen, Heald and McLeod (2005), which tracks the implementation of the Barnett formula since devolution in three UK spending reviews of the early to mid-2000s in order to deepen public understanding of</p>

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how devolution finance is embedded within the UK public expenditure framework. It demonstrated that the formula's implementation was far from transparent and there was much more governmental discretion in fiscal transfers between Westminster and Scotland, Wales and Northern Ireland than was previously recognised.

Heald's research was financed by the Nuffield Foundation (1997-98), the ESRC Devolution Programme (2001-03) and the Northern Ireland Economic Council (2001-03). These awards totalled £184,956.

### 3. References to the research

- Kemp A G and Kasim A S (2006). A Regional Model of Oil and Gas Exploration in the UKCS. *Scottish Journal of Political Economy*, 53, 2, 198-221. DOI: [10.1111/J.1467-9485.2006.00376.X](https://doi.org/10.1111/J.1467-9485.2006.00376.X)
- Kemp A G and Stephen L (1999). Expenditures in and Revenues from the UKCS: Estimating the Hypothetical Scottish Shares 1970-2003. University of Aberdeen, Department of Economics, North Sea Study Occasional Paper, No. 70, 1-24. <http://hdl.handle.net/2164/2956>
- Kemp A G and Stephen L (2005). Optimising Oil and Gas Depletion in the Maturing North Sea with Growing Import Dependence. *Oxford Review of Economic Policy*, 21, 1, 43-66. DOI: [10.1093/oxrep/gri003](https://doi.org/10.1093/oxrep/gri003)
- Kemp A G and Stephen L (2008). The Hypothetical Scottish Share of Revenues and Expenditures from the UK Continental Shelf 2000-2013. 1-38. <http://www.scotland.gov.uk/Publications/2008/06/UKContinentalShelfRevenue>
- Kemp A G, North Sea Oil and Gas, In A. Goudie (2013), *Scotland's Future: The Economics of Constitutional Change*. (Dundee University Press), 2013, 243-266. Available from HEI on request.
- Heald D A and McLeod A (2005). The embeddedness of UK devolution finance within the public expenditure system. *Regional Studies*, 39, 4, 495-518. DOI: [10.1080/00343400500128556](https://doi.org/10.1080/00343400500128556)

### 4. Details of the impact

The early study (Kemp and Stephen, 1999) broke new ground and has been cited in the debate on constitutional change since that time. The results of the economic modelling of the hypothetical tax take for historic years have been used in the recent report of the House of Lords Select Committee on Economic Affairs (see below). The study by Kemp and Stephen (2008) has been used every year since then by the (SNP) Scottish government in its yearly publication, *Government Expenditure and Revenue, Scotland* (ISBN: 978-1-78045-705-5) and was also used by the Scottish Government in their publication *An Oil Fund for Scotland* (2009) (ISBN: 978-0-7559-8119-9). Kemp and Stephen have been asked by the Scottish Government to update the oil related estimates every year since 2008. It should be noted no other reputable source of information is available on the hypothetical Scottish shares of production, investment, gross revenues and tax revenues from North Sea oil and gas. The modelling has widely been accepted as being independent and reliable in the on-going debate. Tax revenues would form a substantial part of a Scottish Government budget in the event of independence or enhanced devolution and an understanding of their potential size, volatility, and long term behaviour is clearly important to the constitutional debate.

Professor Kemp was asked to give written and oral evidence to (1) the House of Commons Select Committee on Energy and Climate Change (March 2012) and (2) the House of Lords Select Committee on Economic Affairs (October 2012) on the implications of Scottish independence for

the North Sea oil and gas industry. A major element in both instances concerned petroleum taxation and licensing issues. These related to (1) the intricate problems of taxing the industry separately in Scotland and the rest of the UK and (2) the likely size of the tax revenues from the Scottish sector. Kemp was able to call on his updated research to give useful information on the subject. The House of Lords Committee published its report in April 2013 (*The Economic Implications for the United Kingdom of Scottish Independence*, HL Paper 152). The report incorporates material from Kemp's modelling of the hypothetical Scottish share of North Sea tax revenues since 1976, and his Memorandum and Oral Evidence are published in full. A further publication by the Scottish Government entitled *Maximising the Return from Oil and Gas in an Independent Scotland* (ISBN: 978-1-78256-776-9) cited Kemp (2013) as a credible source of estimates of potential future oil production and decommissioning costs relating to the likely Scottish continental shelf.

Professor Kemp was invited to become a member of the Council of Economic Advisers (2007-2011) to the Scottish Government, where his expertise on oil and gas matters was utilised. In 2008-2009 Kemp was appointed a member of the Independent Expert Group to the Calman Commission on Scottish Devolution. He was the lead author of the report entitled *Natural Resource Taxation and Scottish Devolution: Evidence from the Independent Expert Group to the Commission on Scottish Devolution*, [www.commissiononscottishdevolution.org.uk/uploads/2009-06-06-ieg-natural-resource-taxation-1.pdf](http://www.commissiononscottishdevolution.org.uk/uploads/2009-06-06-ieg-natural-resource-taxation-1.pdf)

Professor Kemp was appointed a member of the Scottish Energy Advisory Board to the Scottish Government (chaired by the First Minister) in 2011 reflecting his expertise in oil and gas matters.

Based on his research papers Kemp has given many TV interviews on the subject of constitutional change and North Sea oil and gas to the BBC and STV, radio interviews to BBC Radio Scotland, Radio 4, North Sound, and press interviews to The Financial Times, Times, Scotsman, Herald and Aberdeen Press and Journal. These indicate the wider impact effect on public debate.

Professor Heald provided written expert evidence in 2009 to the Calman Commission on Scottish devolution that referenced his research, on how the Barnett formula affects Scottish and UK public finances. This public impact was further strengthened through his written and oral evidence to parliamentary committees investigating this controversial topic, with frequent references to his research and evidence in published reports. These include: participation in the Round Table on the Budget Process held by the Finance Committee of the Scottish Parliament (10/06/2008); a private seminar for the House of Lords Select Committee on the Barnett Formula (14/01/09); and public evidence to the Committee on Finance and Personnel of the Northern Ireland Assembly (3/11/10). On these occasions he communicated his findings that the operations of the Barnett Formula have not been properly documented, thereby eroding the transparency and legitimacy of the devolution finance settlement. His work is cited extensively by other witnesses to the Calman Commission, government Committees and Committee Reports.

Heald's research has also been exploited in government inquiries: the Holtham Commission on Welsh funding (private seminars on 09/12/08 and 23/09/09); the Calman Commission on Scottish devolution (invited seminars on 08/12/08 and 12/03/09); and the McKay Commission on the implications of devolution for the composition and role of the House of Commons (oral evidence, 10/05/12).

## 5. Sources to corroborate the impact

1. Government Expenditure & Revenue Scotland. Yearly issues 2008-2009, 2009-2010, 2010-2011, 2011-2012, The Scottish Government.  
<http://www.scotland.gov.uk/Publications/2010/06/22160331/0>  
<http://www.scotland.gov.uk/Publications/2011/06/21144516/0>  
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<http://www.scotland.gov.uk/Publications/2013/03/1859/downloads>

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2. House of Lords Select Committee on the Barnett Formula, The Barnett Formula, 1st Report of Session 2008–2009, London, Stationery Office, 2009.
  - a. <http://www.publications.parliament.uk/pa/ld/lbarnett.htm>
3. House of Lords Select Committee on Economic Affairs, The Economic Implications for the United Kingdom of Scottish Independence 2<sup>nd</sup> Report, HL Paper 152, April 2013.  
<http://www.parliament.uk/business/committees/committees-a-z/lords-select/economic-affairs-committee/inquiries/parliament-2010/economic-implications-for-the-uk-of-scottish-independence/>
4. The (Calman) Commission on Scottish Devolution, Serving Scotland Better: Scotland and the United Kingdom in the 21st Century, Calman Commission, 2009.  
<http://www.commissiononscottishdevolution.org.uk/>
5. Independent (Holtham) Commission for Funding and Finance for Wales, Fairness and accountability: a new funding settlement for Wales, Cardiff, Welsh Government, July 2010.  
<http://wales.gov.uk/icffw/home/report/fundingsettlement/?lang=en>
6. An Oil Fund for Scotland, The Scottish Government, 2009.  
<http://www.scotland.gov.uk/Publications/2009/07/28112701/0>
7. Maximising the Return from Oil and Gas in an Independent Scotland, the Scottish Government, July 2013.  
<http://www.scotland.gov.uk/Publications/2013/07/5746/downloads#res-1>
8. First Minister of Scotland, Scottish Government, to corroborate the impact Professor Kemp's research work on North Sea oil and the Scottish economy.
9. Head of Edinburgh Office of UK Statistics Authority. To corroborate Professor Kemp's research work on quantifying North Sea oil and gas production, investment, operating costs and tax revenues attributable to Scotland.
10. Chief Economic Adviser to the Scottish Government. To corroborate Professor Kemp's research on North Sea oil and gas and the Scottish economy.