

## Impact case study (REF3b)

<b>Institution:</b> Bournemouth University
<b>Unit of Assessment:</b> UOA26
<b>Title of case study:</b> Modelling economic impact for national governments.
<b>1. Summary of the impact</b> (indicative maximum 100 words)

Bournemouth University (BU) researchers have developed economic modelling techniques that more accurately predict the outcome of events, policies or other major economic decisions. This type of modelling allows governments and organisations to effectively plan for the positive and negative impacts arising from decisions. The technique was used to inform estimates of the value of the 2012 Olympic Games and subsequent tourism legacy; to provide the evidence base for VisitScotland naming 2013 the ‘Year of Natural Scotland’; to inform a Parliamentary debate on music tourism and establish greater representation of music in VisitBritain marketing material; and to inform the Government of Gibraltar of the impact of changes, such as the benefits of cross-border activity.

<b>2. Underpinning research</b> (indicative maximum 500 words)
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The underpinning research undertaken by Fletcher (BU 1996 to present) and Blake (BU 2008 to present) is represented by a number of publications and research awards. These have pioneered application of new approaches to estimating the economic impacts of tourism activities.

Economic impact research has evolved since the 1970s with the use of input-output models. These typically estimate static economic impacts that are limited in their applicability. Building on these earlier models, more recent research, in which Fletcher and Blake have been instrumental, has extended and enhanced economic impact modelling in the following ways:

- **The incorporation of the role of displacement, by which tourism activity displaces other forms of activity through developments of computable general equilibrium (CGE) models.** P1 used a CGE model to estimate the impacts of tourism showing that displacement caused by tourism expenditure leads to reductions in manufacturing sectors. This in part reduces the benefits tourism brings to some sections of the economy and could lead to the overall impact of tourism on some groups being negative (P2).
- **The use of dynamic models to allow impacts of future events to be seen before they take place** (P3–P6). P3 is the first example of such a dynamic model being used to estimate the economic impacts of tourism. It showed that an event such as the Olympics can have impacts on economic activity years in advance. This is due to anticipation that the event will take place at a definite time in the future, and expectation of tourism expenditures at that event. This methodology also enables the estimation of expenditures in host cities as compared to the host country (P4–P6).
- **The incorporation of forecasting functions and environmental impact modules in user-friendly interfaces (G1 & G2) and web interfaces (G6).** This allows the impact models that have been developed to have a greater application, with users and policy makers able to generate new sets of results to answer immediate questions. In the case of G6, this has included a web-based questionnaire through which businesses in tourism destinations input data regarding their firm’s activity over a period of time. These data sets are gathered through an online database to allow the same firms to then access indicators that not only demonstrate their economic and environmental impacts in their destination but also to consider the performance of their business relative to the sector average, minimum and maximum for each variable incorporated. For instance, a hotel can see what contribution it makes to the local economy, what the environmental consequences are and how well it is performing in terms of energy usage, what its revenue per available room is

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compared with the sector and even the proportion of its marketing costs in relation to its sector.

### 3. References to the research (indicative maximum of six references)

#### Publications

- P1.** Blake, A., Arbache, J.S., Sinclair, M.T. and Teles, V. (2008). Tourism and poverty relief. *Annals of Tourism Research* 35(1), 107–126. DOI: [10.1016/j.annals.2007.06.013](https://doi.org/10.1016/j.annals.2007.06.013)
- P2.** Blake, A. (2008). Tourism and income distribution in East Africa. *International Journal of Tourism Research*, 10(6), 511–524. DOI: 10.1002/jtr.702
- P3.** Blake, A. (2009). The dynamics of tourism's economic impact. *Tourism Economics*, 15(3), 615–628. DOI: [10.5367/000000009789036576](https://doi.org/10.5367/000000009789036576)
- P4.** Li, S., Blake, A. and Cooper, C. (2011). Modelling the economic impact of international tourism on the Chinese economy: a CGE analysis of the Beijing 2008 Olympics. *Tourism Economics*, 17(2), 279–303. DOI: [10.5367/te.2011.0025](https://doi.org/10.5367/te.2011.0025)
- P5.** Li, S., Blake, A. and Cooper, C. (2010). China's tourism in a global financial crisis: A Computable General Equilibrium Approach. *Current Issues in Tourism*, 13(5), 435–453. DOI: [10.1080/13683500.2010.491899](https://doi.org/10.1080/13683500.2010.491899)
- P6.** Li, S., Blake, A. and Thomas, R. (2013). Modelling the economic impact of sports events: the case of the Beijing Olympics. *Economic Modelling*, 30, 235–244. DOI: [10.1016/j.econmod.2012.09.013](https://doi.org/10.1016/j.econmod.2012.09.013)

#### Research awards

- G1.** Blake, A. (2008). *Study to Evaluate the Economic Performance and Contribution of Irish Tourism*. Report for Failte Ireland (with Indecon International Economic Consultants). £17,000.
- G2.** Blake, A. (2008). *Updating & Improving the Moffat Model*. Research award by VisitScotland. £18,000.
- G3.** Blake, A., Curtin, S., Richards, S., Vaughan, R., Fletcher, J. and Brackstone, J. (2009). *The Economic Impact of Wildlife Tourism in Scotland*. Report for the Scottish Government. £59,000.
- G4.** Fletcher, J. (2009). *An economic impact study and analysis of the economies of Gibraltar and Campo del Gibraltar*. Report for the Gibraltar Chambers of Commerce. £25,000.
- G5.** Blake, A., Richards, S. and Jackson, C. (2010). *Music Tourism*. Report for UK Music. £16,000.
- G6.** Fletcher, J. (2010). *Sustainable tourism investment in coastal areas*. Report and model for UN Environment Program (UNEP) and the Worldwide Fund for Nature (WWF). £45,000.
- G7.** Fletcher, J. (2011). *An economic assessment of the Boscombe Artificial Surf Reef, Crown Estate's Marine Stewardship Programme*. £78,000.
- G8.** Blake, A. (2012). *Tourism Sector VAT Analysis: CGE Modelling Results*, Report for Tourism Respect. £11,000.

### 4. Details of the impact (indicative maximum 750 words)

The models and modelling approaches developed by Fletcher and Blake have fed into the development of tourism-related and general economic policies by a number of international

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organisations, national governments and public authorities of various ranks. This is evidenced through a series of examples.

Blake's work on dynamic modelling of tourism demand during the Olympics (P3) developed new methodologies for estimating the impact of future events. This accounts for the fact that businesses and other actors in the economy anticipate these events and make changes to their activity many years in advance. The model developed by Blake was used to estimate the value of the London 2012 Olympics to the UK. It also showed the value of the post-Olympic tourism legacy and economic gains that would be made by London partly at the expense of the rest of the UK. These findings contributed to the evidence base that led to policy changes, such as promoting the need for destination image building during the Games and of spreading the tourism benefits around the UK. This was delivered through the work of the Nations and Regions Group, which identified opportunities for tourism outside of London.

In 2010, Blake led a research project commissioned by the Scottish Government (R1) to estimate the size and economic contribution of wildlife tourism in Scotland (G3). This involved the estimation of net impacts of tourism, taking account of displacement (P1 & P2). This project estimated that wildlife tourists spent £276 million in Scotland during 2009, which contributed £65 million to Scotland's gross domestic product (GDP) and 2,763 full-time equivalent jobs. This provided the evidence base that led to VisitScotland naming 2013 the 'Year of Natural Scotland' (R2 & R3).

In 2010–11, Blake led a research project commissioned by UK Music – the umbrella organisation for different elements of the UK music industry (G5). The resulting publication *Destination: Music* (R4) demonstrated that 7.7 million tourists travel to or within the UK to attend music festivals or concerts. They spend £1.4 billion during the course of their trips, contributing £864 million to the UK economy and providing the equivalent of almost 20,000 full-time jobs. This project took displacement into account in estimating the economic contribution of this activity (P1 & P2). This report was discussed in Parliament on 22 November 2011 (R5), and has led to the formation of a UK live music group with representation by CEOs from music and events companies (R6). The evidence base contained in this report also provided the basis for increased lobbying by the industry for a greater representation of music in VisitBritain's marketing, which has since included iconic music images in its 'Great Britain' campaign (R7).

In 2012, Blake conducted research for Tourism Respect to estimate the economic impacts of implementing a reduced rate of VAT for accommodation and visitor attractions (G8). This involved the construction of a CGE model to estimate the net impact of displacement. This was in a dynamic setting to show how activity changes in advance of any tax-change taking place (P3). The results from this research demonstrate that such a policy would boost GDP by between £3 billion and £4 billion per year while being broadly revenue neutral. These results were presented to HM Treasury officials in September 2012 (R8) who have used them in a briefing note to ministers for possible consideration in future budgets. It has also been used as the basis for industry lobbying (R9 & R10) and is a key source in the current debate on the levels of VAT in these sectors.

Since the 1980s, the UK Government and the Government of Gibraltar have used the economic models developed by Fletcher to determine the impact of various changes. These include the closure of HMS Dockyard, the closure of the Royal Naval Hospital, the development of Gibraltar Ship Repair, the opening of the frontier with Spain, the appeal against EU judgements on regional selectivity with respect to Corporation Tax Rates, the operation of off-shore economic activities, and the management of its online gaming industry (G4).

In a letter to BU's Vice-Chancellor, the Chief Minister for Gibraltar says the research by Fletcher has "provided invaluable policy insights, enabling appropriate planning and negotiating approaches to be made" (R11).

He continues: "Specifically since 2008, Professor John Fletcher's input-output model, suitably updated, has provided robust evidence for the EU to support Gibraltar's offshore business, its right to determine its own corporate tax rates and the current issues with respect to the online gaming

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tax changes proposed by the UK. Furthermore, Professor Fletcher's research into the economic impact of Gibraltar on the Campo de Gibraltar, provided invaluable insights into the relationship between the two economies and were welcomed by both sides of the frontier" (R11).

To summarise, the economic modelling techniques developed by Blake and Fletcher more accurately predict the outcome of events, policy changes or other major economic decisions. The technique has been used in a range of applications including informing estimates of the value of the 2012 Olympic Games and subsequent tourism legacy; providing the evidence base for VisitScotland naming 2013 the 'Year of Natural Scotland'; informing a Parliamentary debate on music tourism and establishing greater representation of music in VisitBritain marketing material; and informing the Government of Gibraltar of the impact of changes.

**5. Sources to corroborate the impact** (indicative maximum of 10 references)

**R1.** Bryden, D.M., Westbrook, S.R., Burns, B., Taylor, W.A. and Anderson, S. (2010). *Assessing the economic impacts of nature based tourism in Scotland*. Scottish Natural Heritage Commissioned Report No. 398. Available from: <http://www.snh.gov.uk/docs/B726802.pdf> [accessed 20 November 2013].

**R2.** VisitScotland (2012). *Year of Natural Scotland Toolkit*. Toolkit and website. Available from: [http://www.visitscotland.org/business\\_support/advice\\_materials/toolkits/year\\_of\\_natural\\_scotland\\_2013.aspx](http://www.visitscotland.org/business_support/advice_materials/toolkits/year_of_natural_scotland_2013.aspx) [accessed 20 November 2013].

**R3.** Tourism Intelligence Scotland (2012). *Wildlife Tourism in Scotland*. Opportunities for Growth Guide. Available from: [http://www.tourism-intelligence.co.uk/Assets/~/\\_media/TIS/Documents/Intelligence%20and%20insights/Wildlife%20Tourism%20Guide%20for%20web.aspx](http://www.tourism-intelligence.co.uk/Assets/~/_media/TIS/Documents/Intelligence%20and%20insights/Wildlife%20Tourism%20Guide%20for%20web.aspx) [accessed 20 November 2013].

**R4.** UK Music (2011). *Destination: Music*. Available from: <http://www.ukmusic.org/assets/media/UK%20Music%20-Music%20Tourism.pdf> [accessed 20 November 2013].

**R5.** UK Parliament (2011). *Music and the Economy*, parliamentary debate, 22 November 2011. Available from: <http://www.theyworkforyou.com/whall/?id=2011-11-22a.65.0> [accessed 20 November 2013].

**R6.** UK Live Music Group. Available from: <http://www.ukmusic.org/about-us/our-members1/uklivemusicgroup> [accessed 20 November 2013].

**R7.** VisitBritain (2012). *Music is GREAT Britain*, marketing campaign including print media, video advertising and other media. Available from: <http://www.visitbritain.tv/celebrity/music-is-great-competition-winners.html> [accessed 20 November 2013].

**R8.** Campaign for Reduced Tourism VAT (2012). *Cut Tourism VAT*. Available from: <http://www.cuttourismvat.co.uk> [accessed 20 November 2013].

**R9.** E-petition (2012). *Reduce rate of VAT for UK's tourism industry*. Available from: <http://epetitions.direct.gov.uk/petitions/31432> [accessed 20 November 2013].

**R10.** British Hospitality Association (2012). *Open Letter to the Chancellor*. Available from: <http://www.bha.org.uk/2012/12/10/the-cut-vat-campaign-is-firing-on-all-cylinders/> [accessed 20 November 2013].

**R11.** Letter from Chief Minister, Government of Gibraltar, 21 October 2013 (available on request).