Economic Contribution Study:

An Approach to the Economic Assessment of Arts & Creative Industries in Scotland

Annexes to Final Report
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Carlisle
Suite 7 (Second Floor)
Carlyle's Court
1 St Mary's Gate
Carlisle CA3 8RY
t: 01228 402 320
m: 07501 725 114
e: stephen@dcresearch.co.uk

Leicester
1 Hewett Close
Great Glen
Leicester
LE8 9DW
t: 0116 259 2390
m: 07501 725115
e: jon@dcresearch.co.uk

www.dcresearch.co.uk

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ANNEX 1: MEASURING A&CI - DEVELOPING A SCOTTISH APPROACH

The recent emergence of the creative industries as a distinct area of interest for economists, statisticians, cultural specialists and public-policy makers reflects a growing awareness of their economic potential and their role in fostering cultural diversity through the market. The concept of creative industries for the purpose of public policy making remains very young and not all governments are convinced of the need to address this sector with targeted initiatives.

With the advent of new technologies in the last 20 years such as the internet, e-commerce and electronic files that make sharing, trading and consuming cultural goods and services easier than ever before, globalisation has had a profound impact on the creative industries. Statistical methodologies, which are so important to provide officials with the information they need to develop suitable policy to support the creative industries, have yet to catch up with this reality. In order to harness the opportunities offered by the creative industries, governments first need to undertake thorough mapping and statistical research to better understand them.

From 'Understanding Creative Industries' (UNESCO, 2006)

Scoping the Arts and Creative Industries – Starting with DCMS

An 'industry' is a group of activities. Most businesses and almost all industries require some degree of creativity, but some are more profoundly dependent on creative individuals than others.

This study started by taking the scope of creative industries, as used by the Department for Culture, Media and Sport for its latest Creative Industries Economic Estimates (DCMS (UK), December 2011): '***those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of economic property'***.

The industries listed in those estimates are derived from the thirteen 'Creative Industries' (listed in Table A1.1 overleaf) selected after the DCMS Creative Industry Mapping Projects of 1998 and 2001 (DCMS (UK), 1998 and 2001). They are normally presented in alphabetical order (as in Table A1.1 overleaf).

Table A1.1: List of Creative Industries (DCMS, 2001)	
1.	Advertising
2.	Architecture
3.	Art & Antiques Market
4.	Crafts
5.	Design
6.	Designer Fashion
7.	Film & Video
8.	Interactive Leisure Software
9.	Music
10.	Performing Arts
11.	Publishing
12.	Software & Computer Services
13.	Television & Radio

This DCMS list of 'Creative Industries' has come to be considered 'standard' in the UK. While it is sometimes considered a 'leader' in the world as a whole, it certainly cannot be considered a standard outside the UK. In other places different boundaries are set, sometimes on issues of principle, and sometimes because the pattern of local creative and economic activity is different. The European Union and UNESCO have both had significant influence in the adoption of wider definitions, seeking to cover the 'Cultural' sector, including in UNESCO's case sport and tourism (UNESCO, 2006). Others have advocated significantly narrower definitions tied to intellectual property which can be protected. Some have rejected the term 'creative' altogether, on the grounds that operationally creative is essentially a synonym for innovative, and is thus not a fixed feature of an industry (Alanen, 2008).

DCMS itself uses at least two definitions, in addition to the list of thirteen industries above. One is the broader one adopted in the DCMS Evidence Toolkit. The Technical Report for that (DCMS (UK), August 2004) usefully reviews the issues and originally, as the Regional Cultural Data Framework, was intended to assist in delineating the scope of investigations such as the present one in parts of the UK. It sets out seven 'domains', and provides something of a conceptual framework for selection, something which is missing from the crude alphabetical list of 13 industries.

There is important debate about the distinctions and boundaries between 'creative' and 'cultural' industries (Galloway & Dunlop), but as a practical matter the 2001 DCMS definition became widely accepted. It is therefore adopted as a starting point for this study seeking to measure the economic contribution of Arts & Creative Industries in Scotland.

The original choice of industries for inclusion in the Mapping made by DCMS elevated considerations of international competitiveness, growth, and exports alongside art and culture. It has been valuable in showing that creative endeavour has a substantial economic contribution to make at the national level.

Grouping and Classifying the Arts & Creative Industries

In the years after the 1998 and 2001 mapping projects DCMS continued its analysis of cultural and creative industries, taking account of work in the area by UNESCO and the European Union. One document, the DCMS Evidence Toolkit (DCMS (UK), August 2004) offered a conceptual and practical grouping of the classification into seven domains.

The seven domains are:

- Visual-Arts
- Performance
- Books and Press
- Audio-Visual
- Sport
- Heritage
- Tourism

The conceptual structure is more appealing than an alphabetical list, and provides a framework for potential further subdivisions and extensions of the Arts & Creative Industries concept. As in almost every classification system there remain moot issues and contestable cases, but the overall system has substantial cognitive and practical appeal. DCMS presents its classification on the basis of two premises:

A. Culture has both a 'material' and a non-material dimension. The definition of the Cultural Sector must focus upon material culture, and we understand this to be the sum of activities and necessary resources (tools, infrastructure and artefacts) involved in the whole 'cycle' of creation, making, dissemination, exhibition/reception, archiving/preservation, and education/ understanding relating to cultural products and services.

The notion of the culture cycle can be thought of as analogous to a production chain or network. A production chain is basically the steps or cycle that any product or service goes through to transfer it from an idea through production, distribution, and exchange, to final consumption. At each step or link, a transformation takes place. Like a chain, each link is dependent upon, and often interactive with, the other links in the chain. Thus, the production of goods and services always happens in a context – an idea is nothing without execution, a product or service is nothing without distribution, and distribution is nothing without a site for exchange or an end consumer or user. All the leading international statistical frameworks for the Cultural Sector embody the same or similar logic.

B. We recognise that the range of activities defined as 'cultural' is mobile and changing. However, at their most inclusive, we propose that the domains of the Cultural Sector cover the following: Visual Art, Performance, Audio-Visual, Books and Press, Sport, Heritage, and Tourism.

In addition to the strong linkages that exist across the culture cycle or production chain within each domain, there are also significant linkages between these seven domains. The interaction between the cultural domains is the factor that makes for a logical 'cultural' grouping, as the relationship between the domains is far stronger than the interaction between the same domains and other activities, for example the financial services or the extractive industries.

Overlain on this list of domains is the issue of funding and markets. Some activities are exclusively pursued for profit, others are not, and more still are mixed. Thus, there is a strong case for the subdivision of some activities into 'mainly for profit' and 'not for profit' categories. This would usefully inform public funding decisions, as well as gauging the relative role of markets in particular domains.

The final three of the seven domains – Sport, Heritage and Tourism – are officially outside the scope of this study. However, in order to more accurately reflect the economic footprint of cultural activity in Scotland, it was agreed to include Heritage. While the tourism connections of the other domains are an important part of this study, and Visit Scotland has been closely involved with the work as members of the national Steering Group, tourism *in and for itself* has not been included as a domain in this study.

Moving Beyond the DCMS CIEE Methodology

Underpinning the results presented in Section 2 of the main report (i.e. the application of the DCMS CIEE 2011 definition and weightings) is the fact that there are a range of issues with applying this standard approach to Scotland.

A key influencing factor in the investigation of these issues is the principle that the approach used in this study sought to reflect the character of artistic, cultural and creative endeavour in Scotland, and its industrial structure – not only as a whole, but within the country's various geographic areas. The aim of this was to develop a more nuanced understanding of some of the interactions and organisational structures that exist within the Arts & Creative Industries in Scotland and to ensure that this study captured these as appropriately as it could.

The DCMS CIEE methodology has recently changed and recognises alternative approaches. Recent work from a range of sources, including the Scottish Government, NESTA, sector-groups (e.g. for the Crafts sector, Creative & Cultural Skills), and a range of other sources and commentators indicates that mechanistically applying the DCMS CIEE 2011 methodology will not capture appropriately the economic contribution of the Arts & Creative Industries. Even without this present study, this is specifically the case for Scotland, and raises questions for aspects of the industries in the UK generally.

In order to test this, this study included reviewing a range of sources of evidence to assess the extent to which the DCMS definition should (or should not) be amended/extended to ensure that as far as is possible, Arts & Creative Industries in Scotland can be appropriately reflected and measured.

This review included carrying out a range of data analyses (including drawing on findings from examining industry and occupation data for Scotland and for the UK), literature/document reviews (covering academic literature and current policy debates), assessing examples of international practice about defining and measuring the economic contribution of the Arts & Creative Industries, as well as drawing on the views of representatives from the Arts & Creative Industries sectors – especially those sections of Arts & Creative Industries where the data analysis and other research identified issues with how the standard DCMS definition dealt with them.

All of this research identified a number of issues which suggested that applying the standard CIEE 2011 definition would not appropriately reflect Scotland. In addition, it was also able to identify (primarily due to the availability of new statistical classification systems as well as a detailed analysis of occupational and industrial data) a more refined approach to the assessment and categorisation of Arts and Creative Industries. In summary, these issues include:

- The lack of ability for the DCMS CIEE to provide any data on the Crafts sector – a sector regarded as important within Scotland's Arts & Creative Industries.
- The lack of inclusion of sectors that are accepted as being core elements of the creative and cultural landscape/ecology within Scotland – including heritage and textiles.

- The identification of new, more specific, data on relevant industrial classifications that fall within the definition of Arts & Creative Industries (e.g. Cultural Education – 85520 in SIC2007).
- The lack of inclusion of some sectors that, whilst not previously regarded as creative when the original DCMS definition was set out, could now, due to changes in practice, be regarded as creative (e.g. photographic processing)
- The use of broad sector groupings (e.g. the conflation of Music and Visual and Performing Arts into one group) that restrict the usefulness of data to both policy makers and those active in the Arts & Creative Industries sectors.
- The removal, within the most recent CIEE definition, of specific sectors from the definition of Creative Industries (e.g. parts of the Software Industries).
- The recent removal (in 2011) of a 'grossing up' factor used in previous DCMS CIEE definitions. The decision is understood to have been made on the basis that forthcoming data improvements would remove the need for such a factor. However, investigation has shown that issues still exist with the data, as well as identifying that a blanket grossing up factor is not an appropriate solution.
- The use of weightings for some sectors (e.g. designer fashion) that are now regarded as outdated and do not appropriately reflect the current industrial/economic structure in Scotland.

The last three bullet points – all relating to the recent changes to the DCMS CIEE definition and methodology – are considered in more detail below.

Changes to the 2011 Methodology for CIEE

There have been recent changes to the DCMS approach – outlined in the December 2011 Creative Industries Economic Estimates (CIEE) – that have been the subject of some debate. These issues, in particular, relate to changes made possible by the introduction of a new industrial classification system (SIC 2007, which replaced the previous SIC 2003) – and which have included the removal of some particular sectors from recent estimates that were previously included, and also the removal of a grossing up factor that was previously used in the CIEE but that has now been removed.

In amending the methodology for the CIEE in 2011, DCMS has taken early advantage of the new classifications from SIC 2007. In the Creative Industries SIC 2007 makes it straightforward to distinguish between writing software for 'routine' business and domestic purposes, and writing computer games. In the new CIEE DCMS has deemed that only the games are considered 'creative', so resolving an issue which had a long standing issue for many with a cultural interest. In addition newspaper publishing has been brought into the scope of Creative Industries.

Conceptually these shifts in scope have been welcomed by some, but they have the effect of significantly reducing the numerical estimates: business and domestic software was a large part of the previous definition of Creative Industries. Many advocates will fear that reducing the final numbers reduces the political clout of the sector. This issue is helpfully addressed at a UK level by NESTA (Bakhshi & Freeman, 2012), but there remains for Scotland the conceptual issue of how much commercial programming to include as a 'creative industry'.

(i) Elimination of 'grossing up'

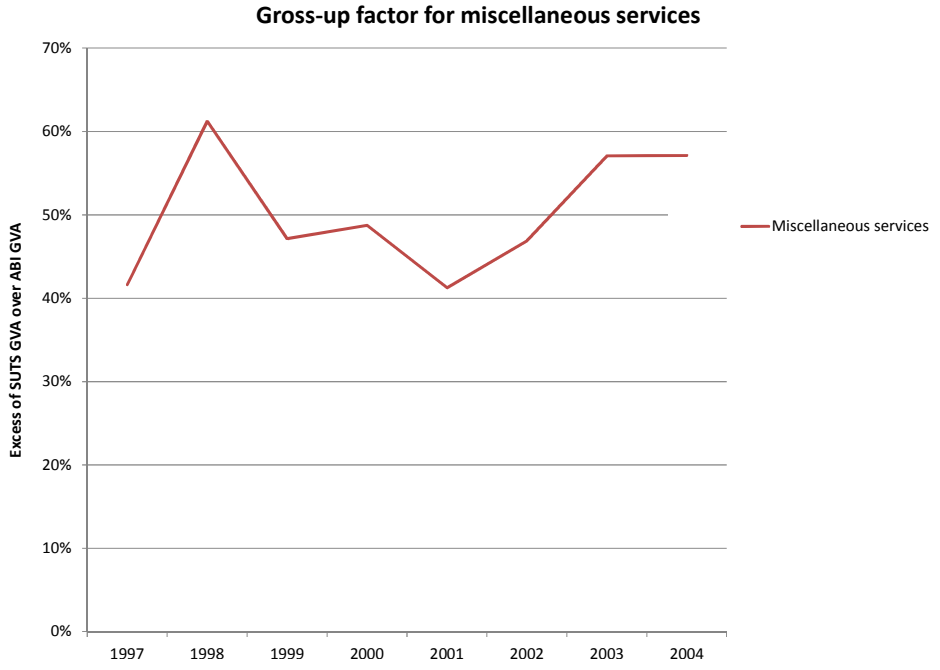
The biggest change in the new CIEE comes from a different source: elimination of a 'grossing up' factor of 30 per cent. It is understood that this was originally introduced to compensate for the difference between the initial survey estimates of GVA, and the final estimates prepared as part of the National Accounts. ONS reconciles 'supply based'

estimates of sales and GVA from the surveys with 'use-based' estimates from such sources as consumer inquiries and export and investment data. The balanced Supply and Use Tables, summarised into more than 100 industries and products, usually provide figures that are statistically stable and consistent across the whole economy.

The decision to eliminate 'grossing up' in the CIEE was, it is understood, made in the summer of 2011. On December 1st 2011 new supply and use tables were published.

National accounting/ABI discrepancies were reviewed historically and it was found that for the broad sector 'miscellaneous services', in which many cultural industries are included, a grossing up of 50 per cent would have been more appropriate – looking at the time series in Figure A1.1 the 30 per cent figure was less than the minimum that happened to occur in the year the second cultural mapping project was carried out.

Figure A1.1: 'Grossing up' factor – recreational services



In terms of the preparation of the latest CIEE (December 2011), it is very likely that in summer 2011 Treasury/ONS were very confident that the need for grossing up would disappear. This was because there was a much-vaunted new method of compiling the supply and use tables (SUTS).

However publication of the new SUTS (on November 11th 2011) shows this is certainly not the case – for example large and strategic industries like North Sea oil and gas require adjustments as large as 27 per cent. Appropriate adjustments therefore need to be investigated on as focused a basis as possible. A preliminary investigation has been carried out and it has been summarised in a separate document, formally outwith the current project (Gibson, February 2012). Sample figures for 2008 and 2009[1] for industries with some creative content are shown in table A1.2 overleaf:

[1] 2009 is the latest year for UK input output tables. There are as yet no official Scottish input output tables based on SIC2007.

Table A1.2 Grossing up/down factors by industry

Gross Value Added ratio of national accounts final estimate (SUTS) to ABS 'approximate' estimate	2008	2009
Product		
Wearing apparel	2.02	2.56
Publishing services	1.06	1.01
Motion picture, video and TV programme production service	2.17	2.05
Programming and broadcasting services	1.09	1.03
Computer programming, consultancy and related services	0.82	0.83
Information services	0.59	0.60
Architectural and engineering services; technical testing and	0.82	0.78
Advertising and market research services	1.09	1.13
Creative, arts and entertainment services	0.72	0.64

These figures must be treated with caution, because in the course of the work it has become apparent that significant adjustments may be required to the National Accounts sales and GVA estimates for some economically large and politically important industries (notably oil and gas).[2]

The crucial conclusion from the creative estimation viewpoint is that a blanket grossing up – whether by 30 per cent or nothing – is inappropriate and, if adopted at all, detailed grossing up figures for the individual industries should be applied instead.

However, in the present circumstances, it is clear that the relationship between National Accounts and Annual Business Survey figures has changed because of new methodologies on both sides, and is probably not yet stable. ***Therefore, there has been no application of grossing up to BRES results in this study. The extraction of grossing up factors can be considered for inclusion once the national accounts have been revised.***

(ii) Issues with the DCMS Weightings/Proportions

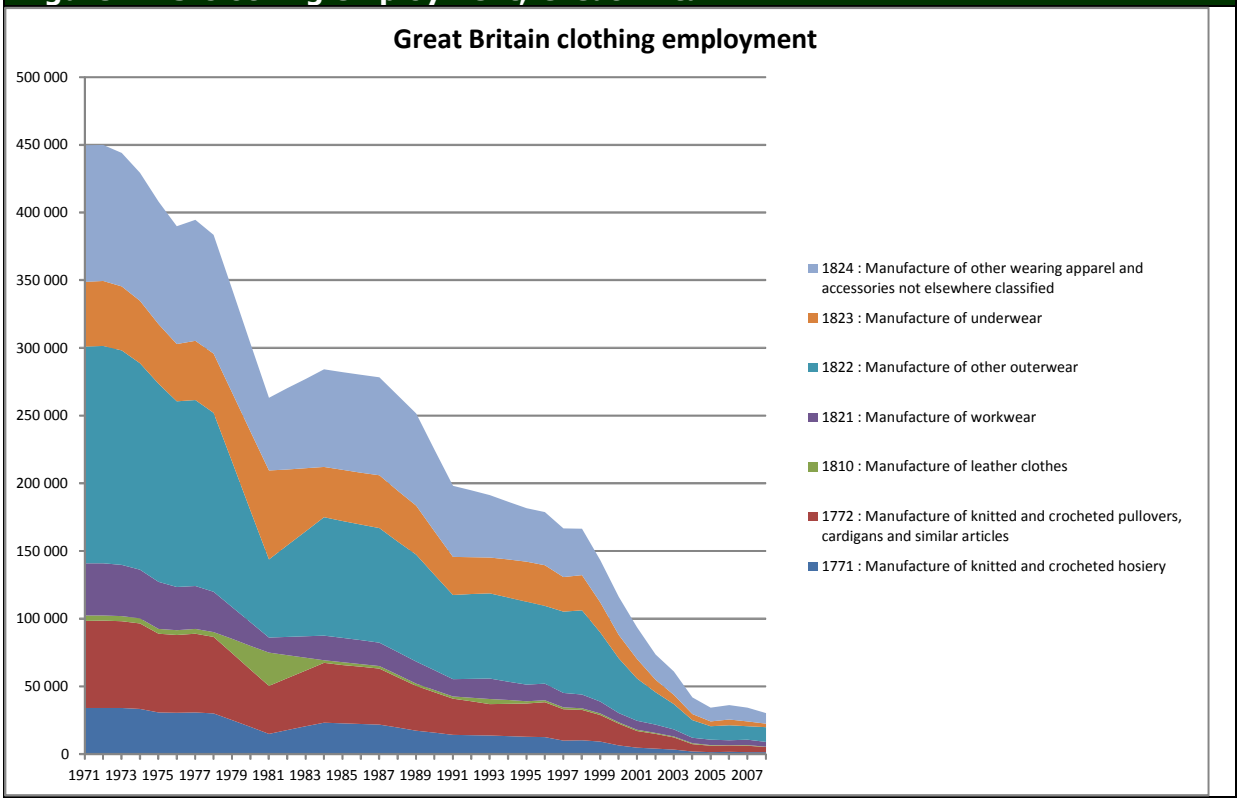
It is also clear that even in their own terms, and for the UK as a whole, the DCMS proportions may have gone awry. One prominent aspect of this is examined below.

Fashion design provides a good illustration of how the DCMS proportions have been hard to adjust as the overall industrial structure of the UK has changed. The DCMS CIEE statistical system estimates fashion designers as 0.5 per cent of employment in the clothing industry. When the proportion was first promulgated the latest available figures showed about 180 000 people employed in the clothing industry in Great Britain, so this amounted to around 900[3].

[2] The study team opened a dialogue with ONS about these, and they (ONS) have accepted that revisions are necessary. It was noted that some of the issues had already been detected by ONS internal quality control systems, and steps taken to correct them. ONS indicate that current thinking is not to change the figures until new National Accounts are published. Even then, it may perhaps not be possible to address all the issues.

[3] For this illustration please note that there has been no *precisely* controlled analysis to match the industry delineation under the older Standard Industrial Classifications, so this figure may vary slightly from ones published at the time.

Figure A1.3 Clothing employment, Great Britain



Currently[4] there are about 30,000 people employed in the clothing industry, so the DCMS CIEE calculation yields only 150 people employed in fashion design in Britain. It is believed, based on analysis of available evidence about fashion design (e.g. occupation data - see bullet points below), that this is a clear under-estimate, and while overall clothing employment has fallen by five sixths, it is understood, that the number of fashion designers and people working closely with fashion designers had been relatively stable or even increased. There are two mechanisms through which any potential undercount can be assessed and confirmed:

- Firstly, through the examination of the occupational data. Indications, based on an assessment of occupational data, suggest that Scotland may have around 500 people working in fashion design, about four times as many as the DCMS methodology would indicate.

- Secondly, as for other sectors, the findings from the Arts & Creative Industries sector consultation events held as part of this study helped us to ascertain the extent to which Scotland's role in designer fashion has changed.

Perspectives of the Arts & Creative Industries in Scotland

The approach adopted for this research has also been able to reflect upon the findings from the sector consultation events carried out during this study, and many of the issues with the DCMS CIEE definition identified above were reaffirmed in the findings from these consultation events.

[4] These charts finish in 2008 to avoid the complications introduced by the new SIC2007.

The key themes that emerged from the consultations are presented below.

First, for those who have an appreciation of the recent changes to the DCMS CIEE methodology – i.e. the 2011 method as compared to the previous method – there are concerns about the impact of these changes on the estimates of the contribution of the sector (especially given that the changes have resulted in a reduction in the overall estimate of the economic contribution of Arts & Creative Industries). There are fears that the implications of these methodological changes could include a reduction in the level of importance and recognition placed on the creative industries by politicians and policy makers.

Second, the categorisation of the creative industries (as presented in Table A1.1) causes frustrations for the sector – in terms of the (lack of) usefulness of these categorisations for those actively involved in the A&CI. These frustrations become more acute when the results typically merge two of the 13 categories to create a category of 'Music and Visual and Performing Arts'.

The strong view from the sector is that the disaggregation of such 'lumping together' is an important issue that needs to be addressed.

Third, whilst those individuals consulted as part of the sector consultation events recognised the focus of this study on assessing the economic impact of A&CI in Scotland, there are strong calls for the impact and contribution of the A&CI to be more fully captured by going 'beyond GVA'.

There are calls for any assessment of the impact of A&CI to reflect the contribution to other (non-economic) agendas – such as health, education, mental well-being, happiness etc. Assessing such wider impacts has long been an issue for cultural economics, and is an area that DCMS amongst others has a long term commitment to (e.g. through the Culture and Sport Evidence (CASE) research[1]).

In addition, there are concerns about going beyond GVA within an economic paradigm – recognising that GVA-based economic assessments will not capture all of the economic impacts of A&CI due to the way that some aspects of activity are treated (e.g. it is particularly recognised that the contribution of the heritage sector as well as the state-funded elements of the broadcasting sectors are missed (or counted as negative) in a GVA based assessment.

Fourth, representatives from across A&CI sectors expressed concerns about the extent to which an economic impact assessment (especially one based on standard economic datasets rather than primary research), can sufficiently reflect and capture the 'portfolio lifestyle' of many of those involved the A&CI. This is thought to be particularly true for those in rural areas (where the activity of those involved in the A&CI is described by those in the sector as a 'crofting approach to the arts'. The scale of portfolio working (or project based working) is accepted as more prevalent in the A&CI than in other sectors, and therefore any issues and challenges with capturing the economic impact of such ways of working are more pronounced.

Linked to this is the issue and challenge of trying to capture the cross-sector and cross-art form activity of many of those involved in A&CI. The scale of 'portfolio lifestyle'/project based working and cross-art form activity can make some of the sectoral distinctions presented in the DCMS approach of limited value and usefulness.

[1] CASE is a joint programme of strategic research lead by DCMS in collaboration with Arts Council England, English Heritage, and Sport England, which aims to strengthen understanding of how best to deliver high quality culture and sporting opportunities to the widest audience, generating positive outcomes for society.

As such, many of the issues mentioned above lead to calls from those involved in the A&CI sectors for the categorisation of A&CI in such economic impact studies to be made meaningful to those in the sector (rather than simply a construct that fits neatly with statistical definitions).

Fifth, the importance of capturing the role of freelancers and sole traders in the A&CI (who may not be accurately captured by standard economic datasets), was emphasised especially when – reflecting the aforementioned issues around portfolio lifestyles, project based working etc. – the scale of freelancers and sole traders is thought to be more significant for the A&CI.

In addition, the role of volunteers within the A&CI is thought to be significant, and for some activities, events and organisations, volunteers can play a critical role (but one that is often under-valued in economic terms).

Sixth, an important dimension for those working in the A&CI (which has emerged as a key theme within the Outer Hebrides case study) is the balance between creative/cultural drivers and economic/business drivers for those operating in the A&CI. There are those for whom creative drivers are as significant as (or more significant than) economic drivers, and as such, there are calls for any economic impact study to reflect or at least appreciate this.

Seventh, the wider tourism role and contribution of the A&CI is thought to be an important and significant economic contribution of the sector, and as such, there are calls from the sector for this role to be appropriately captured in any economic impact assessments.

Finally, alongside all of these issues there were some clear sector specific issues that were identified during the consultations. These primarily related to:

- Including areas of A&CI that are not currently included in the 'DCMS 13' definition but that are regarded as core parts of the A&CI in Scotland (such as heritage/museums & galleries, and textiles).

- Ensuring that attempts to capture particular sectors where identifying the economic contribution using standard economic datasets is accepted as difficult or impossible (most notably crafts) must be addressed or at least explicitly recognised as an issue.

- Ensuring that the weightings attributed to particular sectors/sub-sectors are appropriate to Scotland (rather than the UK) and are appropriate to the structure of the economy in 2012 (e.g. some weightings were created in the late 1990's and the structure of some of the sectors have changed radically since then – such as designer fashion).

Scoping the Arts & Creative Industries in Scotland – Outlining the Approach

Building on the issues with the DCMS approach set out above, outlined below is a refined scope for defining the Arts & Creative Industries in Scotland. In the final scope adopted for this study, a list of sixteen industries has been established (compared to the standard thirteen used in the DCMS CIEE 2011), with Crafts being further subdivided into a number of subsectors.

The definition used reflects the understanding that has emerged from various strands of analysis, detailing some of the interactions and organisational structures that exist within the Arts & Creative Industries in Scotland. It also seeks to exploit the potential for

improved measurement that derives from new statistical classification systems (i.e. SIC2007). Finally, to arrive at the final scope/definition, further work by DCMS, the Scottish Government (including the recent Growth Sectors – SIC 2007 Definitions - User Consultation), and international and academic commentary has been drawn on, along with findings from examining industry and occupation data for the UK and Scotland.

In shaping the definition, the final approach has also been able to reflect upon the findings from the sector consultation events carried out during this study.

In the final scope, a list of **sixteen industries** has been established, with Crafts being further subdivided into a number of subsectors. Not all of these industries and subsectors are present everywhere in Scotland, but presenting them all helps to capture the creative environment and its economic ramifications as well as official statistics can, and to show how distinctive creative activity is. With one exception, the sixteen industries fall into five cultural domains (as set out by DCMS in the 2004 DCMS Evidence Toolkit), and in addition software development (which has until recently been part of the DCMS Creative Industries scope) has been included as a sixth, alongside Creative Education[5] as a seventh domain.

Key adjustments that have been included in this scope - as compared to the DCMS methodology - include:

- **Splitting out/rearranging some industries into more appropriate categories.** This includes splitting out the 'Music and Visual and Performing Arts' into three separate categories; separating the art dealers element from antiques within the DCMS 'Art and Antiques' category and re-categorising them more appropriately; and assigning a part of artistic creation (based on occupation data for artists) to the art galleries category.
- **Adding in industries regarded as part of the wider scope** of **Arts and Creative Industries in Scotland.** Specifically the inclusion of Textiles (within the 'Fashion and Textiles' category), of museums, galleries, historic sites etc. within the 'Heritage' category, and the addition of the 'Creative Education' category.
- The **retention of some categories recently removed by DCMS.** Within Software/Electronic Publishing the classifications covering computer consultancy activities and business and domestic software development have been included within the scope despite recently (2011) having been removed from the DCMS CIEE definition. This retention is consistent with the recent Scottish Government User Consultation on Growth Sectors, which proposes the continued inclusion of business software, reflecting that the Growth Sector has been named in the Government Economic Strategy as 'Creative Industries (including Digital)'.
- Attempting to **capture the 'Crafts' sector** (something that DCMS have not been able to do at all) by identifying the appropriate Standard Industrial Classifications for craft activities and assessing (through data analysis at the local level) which elements within each class can be appropriately designated as crafts rather than manufacturing. In a number of crafts related industries the analysis has sought to exclude large establishments (e.g. in local authorities where hundreds of people are employed making glassware, this has been assumed to be bottles, but places with smaller employment have been assumed to be craft activities). Similar approaches

[5] The analysis for this study has taken advantage of the identification of 'Cultural Education' in the new Standard Industrial Classification (SIC 2007). This class includes provision of instruction in the arts, drama and music. Establishments giving this kind of instruction might be labelled 'school', 'studios' or 'classes'. They provide formally organised instruction mainly for recreational purposes, and such instruction does not lead to a *professional* diploma, baccalaureate or graduate degree [our italics]. Establishments that do lead to a professional qualification are classed elsewhere in the education sector, and their cultural content can only be adduced from education statistics (e.g. Higher Education Statistics Agency, Scottish Funding Council). A&CI in the education sector in Scotland is addressed in Section 5 of this report.

have been used in furniture, ceramics and textiles, and antiques and furniture restoration have also been included within Crafts.

- **Amendments to the DCMS weightings** for some specific industries (e.g. through the use of various aspects of analysis (comparing industrial (SIC) with occupational (SOC) data, assessing Scottish Input-Output Tables, etc.) some issues with the DCMS weightings were able to be addressed in order to make them more relevant to Scotland at the current time.
- Examination of the occupational structure has also led to the **inclusion of some other sectors** which *prima facie* might not have been considered 'creative' (e.g. photographic processing used to be a mundane mechanical industry, whereas now it includes creative photo-editing processes, similar to those employed in other areas of graphic design).

Table A1.3 below summarises the scope used – setting out the domains and industries included. More information on how each industry is precisely defined in terms of the Standard Industrial Classification (SIC 2007), are set out in Annex 2.

Table A1.3: Summary of Scope of Definition of Arts and Creative Industries

DCMS CULTURAL DOMAINS	SCOTTISH ARTS AND CREATIVE INDUSTRIES	
Visual Art	1) Advertising	
	2) Architecture, planning and building design	
	3) Visual art and art dealers/ commercial galleries	
	4) Crafts	4a) Furniture and wood crafts
		4b) Jewellery
		4c) Pottery
		4d) Glass
		4e) Textile craft goods
		4f) Other crafts
		4g) Antiques markets
	5) Fashion and Textiles (includes designer fashion)	
	6) Design and design-dependent industries	
Performance	7) Performing arts including arts facilities and support	
Audio-Visual	8) Music including sound recording, music publishing and distribution and instruments	
	9) Photography	
	10) Film and video	
	11) Computer games etc	
	12) Radio and TV	
Books and Press	13) Writing and Publishing	
Heritage	14) Museums and galleries, archives, libraries, historic sites	
Digital Industries (Formerly in DCMS Creative Industries but not in Cultural Domains)	15) Software/electronic publishing	
Cultural Education	16) Cultural education	

ANNEX 2: LIST OF SIC AND SOC INCLUSIONS WITHIN SCOPE

The breakdown of the definition of Arts & Creative Industries in Scotland used in this study by Standard Industrial Classification 2007 (SIC2007) code is set out in the Tables below.

Table A2.1: Scope of Scottish Arts & Creative Industries used in this Economic Contribution Study

DCMS CULTURAL DOMAINS	SCOTTISH ARTS & CREATIVE INDUSTRIES	Definition of Sector (using SIC 2007)
Visual Art	Advertising	73110 : Advertising agencies 73120 : Media representation
	Architecture	71111 : Architectural activities 71112 : Urban planning and landscape architectural activities 71121 : Engineering design activities for industrial process and production (partial) 74100 : Specialised design activities (partial)
	Visual art	47781 : Retail sale in commercial art galleries 90030 : Artistic creation (partial)
	Crafts	16290 : Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials 31090 : Manufacture of other furniture 32120 : Manufacture of jewellery and related articles 32130 : Manufacture of imitation jewellery and related articles 23410 : Manufacture of ceramic household and ornamental articles 23490 : Manufacture of other ceramic products 23130 : Manufacture of hollow glass 23190 : Manufacture and processing of other glass, including technical glassware 13200 : Weaving of textiles (partial) 13300 : Finishing of textiles (partial) 13922 : Manufacture of canvas goods, sacks etc(partial) 13931 : Manufacture of woven or tufted carpets and rugs 13939 : Manufacture of carpets and rugs (other than woven or tufted) nec 13990 : Manufacture of other textiles nec (partial) 14110 : Manufacture of leather clothes (partial) 14190 : Manufacture of other wearing apparel and accessories (partial) 14200 : Manufacture of articles of fur (partial) 14390 : Manufacture of other knitted and crocheted apparel (partial) 15120 : Manufacture of luggage, handbags and the like, saddlery and harness (partial) 15200 : Manufacture of footwear (partial) 47791 : Retail sale of antiques including antique books, in stores 95240 : Repair of furniture and home furnishings
	Fashion & Textiles	13100 : Preparation and spinning of textile fibres 13200 : Weaving of textiles (partial) 13300 : Finishing of textiles (partial) 13910 : Manufacture of knitted and crocheted fabrics 13921 : Manufacture of soft furnishings 13922 : Manufacture of canvas goods, sacks etc (partial) 13923 : Manufacture of household textiles (other than soft furnishings of 13921)

Table A2.1: Scope of Scottish Arts & Creative Industries used in this Economic Contribution Study

DCMS CULTURAL DOMAINS	SCOTTISH ARTS & CREATIVE INDUSTRIES	Definition of Sector (using SIC 2007)
		13940 : Manufacture of cordage, rope, twine and netting 13990 : Manufacture of other textiles nec (partial) 14110 : Manufacture of leather clothes (partial) 14120 : Manufacture of workwear 14131 : Manufacture of men's outerwear, other than leather clothes and workwear 14132 : Manufacture of women's outerwear, other than leather clothes and workwear 14141 : Manufacture of men's underwear 14142 : Manufacture of women's underwear 14190 : Manufacture of other wearing apparel and accessories (partial) 14200 : Manufacture of articles of fur (partial) 14310 : Manufacture of knitted and crocheted hosiery 14390 : Manufacture of other knitted and crocheted apparel (partial) 15110 : Tanning and dressing of leather; dressing and dyeing of fur 15120 : Manufacture of luggage, handbags and the like, saddlery and harness (partial) 15200 : Manufacture of footwear (partial)
	Design	71121 : Engineering design activities for industrial process and production (partial) 74100 : Specialised design activities (partial)
Performance	Performing Arts	78101 : Motion picture, television and other theatrical casting (partial) 90010 : Performing arts 90020 : Support activities to performing arts 90040 : Operation of arts facilities
Audio-Visual	Music	18201 : Reproduction of sound recording 32200 : Manufacture of musical instruments 59200 : Sound recording and music publishing activities
	Photography	74201 : Portrait photographic activities 74202 : Other specialist photography (not including portrait photography) 74203 : Film processing 74209 : Other photographic activities (not including portrait and other specialist photography and film processing) nec
	Film & video	18202 : Reproduction of video recording 59111 : Motion picture production activities 59112 : Video production activities 59120 : Motion picture, video and television programme post-production activities (partial) 59131 : Motion picture distribution activities 59132 : Video distribution activities 59140 : Motion picture projection activities 78101 : Motion picture, television and other theatrical casting (partial)
	Computer games	58210 : Publishing of computer games 62011 : Ready-made interactive leisure and entertainment software development
	Radio & TV	59113 : Television programme production activities 59120 : Motion picture, video and television programme post-production activities (partial) 59133 : Television programme distribution activities 60100 : Radio broadcasting 60200 : Television programming and

Table A2.1: Scope of Scottish Arts & Creative Industries used in this Economic Contribution Study

DCMS CULTURAL DOMAINS	SCOTTISH ARTS & CREATIVE INDUSTRIES	Definition of Sector (using SIC 2007)
		broadcasting activities 78101 : Motion picture, television and other theatrical casting (partial)
Books & Press	Writing & Publishing	18110 : Printing of newspapers 18121 : Manufacture of printed labels 18129 : Printing (other than printing of newspapers and printing on labels and tags) nec 18130 : Pre-press and pre-media services 18140 : Binding and related services 58110 : Book publishing 58120 : Publishing of directories and mailing lists 58130 : Publishing of newspapers 58141 : Publishing of learned journals 58142 : Publishing of consumer, business and professional journals and periodicals 58190 : Other publishing activities 74300 : Translation and interpretation activities 90030 : Artistic creation (partial)
Heritage	Heritage	91011 : Library activities 91012 : Archive activities 91020 : Museum activities 91030 : Operation of historical sites and buildings and similar visitor attractions 91040 : Botanical and zoological gardens and nature reserve activities
Digital Industries	Software/ Electronic Publishing	58290 : Other software publishing 62012 : Business and domestic software development 62020 : Computer consultancy activities
Cultural Education	Cultural Education	85520 : Cultural education

The Arts & Creative Industries estimates contained in this study use the same official data sources on industry employment and occupations as the DCMS Creative Industry Economic Estimates, but process them in different ways to reflect the availability of detailed information, the needs of UK and Scottish policy-making, and the distinctive structure of the Scottish economy. The following table below compares the way the data has been used in this study with the way that DCMS used it in the most recent estimates (CIEE 2011).

Table A2.2: Comparing the Arts & Creative Industries Scope in this study with the DCMS CIEE 2011 definition

DCMS Cultural Domains	Scottish Arts & Creative Industries	Notes on weighting/ comparison with DCMS CIEE2011
Visual Art	1) Advertising	Same definition used
	2) Architecture, planning and building design	Definition extends beyond SIC architecture to also include 'Urban planning and landscape architectural activities' and 'Engineering design activities for industrial process and production' (partial) and higher proportion of 'Specialised design activities' based on Scottish Input-Output tables
	3) Visual art and art dealers/ commercial galleries	'Music and Visual and Performing Arts' sector has been separated out into three sectors – and antiques included within crafts (see below). Addition of 'Artistic creation' (weighting of 50% based on Scottish occupational and self-employment data.
	4) Crafts	Crafts is not captured by DCMS – wide range of SIC codes included, with extra analysis carried out to remove large scale (non-crafts) production. Crafts includes SIC codes for Furniture and wood crafts; Jewellery; Pottery; Glass; Textile craft goods; Antiques markets
	5) Clothing and textiles (includes designer fashion)	Definition includes designer fashion as defined by DCMS and also includes range of fashion and textiles SIC codes aimed at capturing Scottish fashion and textiles sector. This includes some larger-scale textiles and fashion not included within the 'Textile craft goods' captured within the Crafts sector definition above, but not large routine-product factories.
	6) Design and design-dependent industries	Part of 'Engineering design activities for industrial process and production' added, based on assessment of Scottish Input Output tables
Performance	7) Performing arts including arts facilities and support	'Music and Visual and Performing Arts' sector has been separated out into three sectors
Audio-Visual	8) Music including sound recording, music publishing and distribution and instruments	'Music and Visual and Performing Arts' sector has been separated out into three sectors
	9) Photography	Film & Video & Photography sector from DCMS has been separated out. Also 'film processing' now included - has become creative, not mechanical
	10) Film and video	Film & Video & Photography sector from DCMS has been separated out. Also part of 'Motion picture, television and other theatrical casting' included. Part of 'Motion picture, video and television programme post-production activities' included here (moved from Radio & TV)
	11) Computer games etc	Same SIC definition used (although recognise that other sector estimates are wider in scope than either DCMS CIEE or SACI)
	12) Radio and TV	Part of 'Motion picture, television and other theatrical casting' included. Part of 'Motion picture, video and television programme post-production activities' moved to Film & Video
Books and Press	13) Writing and Publishing	Part of 'Artistic creation' included, and 'Translation and interpretation activities' also included. Definition of printing is wider than DCMS definition – based on assessment of occupational data for Scotland.
Heritage	14) Museums and galleries, archives, libraries, historic sites	Not included in DCMS CIEE

Table A2.2: Comparing the Arts & Creative Industries Scope in this study with the DCMS CIEE 2011 definition

DCMS Cultural Domains	Scottish Arts & Creative Industries	Notes on weighting/ comparison with DCMS CIEE2011
Digital industries	15) Software/electronic publishing	Definition of Software/Electronic Publishing includes aspects now excluded from (but previously within) DCMS. So this covers: 'Other software publishing'; 'Business and domestic software development'; and 'Computer consultancy activities'. The retention of Software and Electronic Publishing also reflects the Growth Sector as defined in the Government Economic Strategy: 'Creative Industries (including Digital)' and the recent User Consultation about Key Sectors proposes the continued inclusion of business software.
Cultural Education	16) Cultural Education	Not included in DCMS CIEE

The general approach adopted has been to include all of what was considered a creative industry in the figures, rather than to adopt a proportional weighting. This judgement was informed by the DCMS experience on textiles, discussed elsewhere in the report Annexes (Annex 1).

There, a small percentage of the clothing manufacture industry was included, in an attempt to estimate 'designer fashion', but as large 'humdrum' factories closed that percentage became demonstrably out of date. Instead what has been done is to remove, as well as can be done on the information available, large factories where it is believed the work is relatively routine, without a great deal of creative intervention. The study team do not have access to the actual factory data, but were able to exclude local authorities where it is believed the large factories lie, and replace employment figures for those areas with figures typical of the rest of Scotland. To this end in the crafts industries there has been adjusted downward for furniture employment in Dumfries and Galloway, Glasgow, North Lanarkshire and Renfrewshire, and glassware employment in Clackmannanshire, Edinburgh and North Ayrshire.

In textiles and related industries there has been an adjustment downward for employment in Angus, Dundee and East Ayrshire. There has not been any adjustment downwards for employment in the Scottish Borders, as that industry includes medium-sized establishments which are to a greater or lesser degree engaged in the production of fashion items, which are considered to be a creative industry.

Occupational Classifications

In addition to the industrial classifications used (based on SIC 2007), the creative occupations assessment included in Section 6 of the main report is the same as the Standard Occupational Classification (SOC) used in the DCMS Creative Industry Economic Estimates (CIEE) 2011. A summary of the SOC codes used is set out overleaf in Table A2.3.

Table A2.3: Standard Occupational Classification (SOC) 2000 included in the DCMS CIEE 2011 definition

Sector	Standard Occupational Classification (SOC) 2000	
	SOC	Description
1. Advertising	1134	Advertising and Public Relations managers
	3543	Marketing associate professionals
2. Architecture	2431	Architects
	2432	Town Planners
	3121	Architectural technologists and Town Planning technicians
3. Art & Antiques	No codes match this sector	
4. Crafts	5491	Glass and ceramics makers, decorators and finishers
	5492	Furniture makers, other craft woodworkers
	5493	Pattern makers (moulds)
	5495	Goldsmiths, Silversmiths, Precious Stone workers
	5496	Floral arrangers, Florists
	5499	Hand Craft occupations not elsewhere classified
	5411	Weavers and Knitters
5. Design	2126	Design and Development engineers
	3421	Graphic Designers
	3422	Product, Clothing and related designers
6. Designer Fashion	3422	Product, Clothing and related designers
	5413	Footwear and leather working trades
	5414	Tailors and dressmakers
	5419	Textiles, garments and related trades n.e.c.
7. Video, Film & Photography	3434	Photographers and Audio-Visual equipment operators
9 & 10. Music and the Visual & Performing Arts	3412	Authors, Writers
	3413	Actors, Entertainers
	3414	Dancers and Choreographers
	3415	Musicians
	3416	Arts officers, producers and directors
	3411	Artists
11. Publishing	3431	Journalists, newspaper and periodical editors
	5421	Originators, Compositors and Print preparers
	5422	Printers
	5423	Bookbinders and Print finishers
	5424	Screen printers
8 & 12. Software, Computer Games & Electronic Publishing	No codes match this sector	
13. Radio & TV	3432	Broadcasting associate professionals
	5244	TV, Video and Audio engineers

Source: DCMS, CIEE 2011

ANNEX 3: TECHNICAL NOTE ON APPROACH TO 'ADJUSTED' GVA AND TURNOVER

There are important conceptual issues arising from the formal definition of Gross Value Added, which is the normal metric by which contributions to economic growth and development are gauged. The value that an organisation or an institution adds is calculated as the difference between the value of its outputs and the value of its inputs. Adding it up across a whole country gives a figure for national Gross Value Added, which is what used to be known as GDP (provided that taxes and subsidies are properly accounted for).

For most commercial bodies the value of outputs is the value of sales, and the value of inputs is the value of purchases (again, with tax adjustments, and also allowing for opening and closing stocks). ONS statistical systems (principally the Annual Business Survey) collect these data from every large enterprise in the country, and a good sample of smaller ones, in the same way as the BRES is used for employment.

However this approach does not work for most government activities, mainly because there are no sales, or very few, but also because national and local government accounts are kept differently from commercial ones. Sometimes a private sector sales figure can be used as a guide, but more usually the statisticians simply assert that the value of government output must be at least as much as the cost of the inputs, so the GVA must be at least as much as the employment costs and any capital use.

However it makes the original 'supply based' estimates, ONS reconciles them with 'use-based' estimates from such sources as consumer surveys and export and investment data. The balanced 'Supply and Use Tables', summarised into more than 100 industries and products, usually provide figures that are statistically stable, and consistent across the whole economy.

When the Annual Business Survey results for the UK were examined in detail, it was found that broadcasting and the heritage sector present some anomalies due to the way in which they have dealt with by the accounting conventions. Across the whole UK the heritage sector is shown in formal national accounts as a value subtractor, rather than a value adder, and the BBC is shown as subtracting value, which serves to greatly reduce the value which commercial broadcasters are shown as adding. According to the Annual Business Survey, GVA is negative for both these sectors.

What has happened is that these two sectors have fallen, in accounting terms, between the two stools which were designed for purely commercial institutions and for government. Most museums and heritage activities are largely supported by grants-in-aid, and also nationally by benefactions, and they have relatively little income by way of sales. This is not to diminish the role of museum shops and the like, but they are not the primary purpose of the institutions that house them. However they do have costs, and the shortfall between the full costs of an institution and any sales-for-money that it earns is considered by the system as negative value added.

- **If** the sectors were considered to be 'selling' services to the public (like universities, or many parts of the NHS) then the grants-in-aid would be treated as sales, and so there would be positive value added. This was the case for the BBC until about five years ago, when the licence fee was considered to be a payment for service. Now, it is considered to be taxation, and so when it is transferred to the Corporation it is considered a subsidy.

- **If** the sectors were considered to be wholly a part of government, whether UK, Scottish or local, they would qualify for having their GVA estimated by rounding up their costs.

The study team has enquired of some overseas national statistical offices, and the latter system is the one that appears to pertain in most countries, despite the formal strictures of the European System of Accounts.

The **study team's interpretation as set out above has been confirmed by ONS**, both in general and by the specific sector teams that compile the relevant sector data.

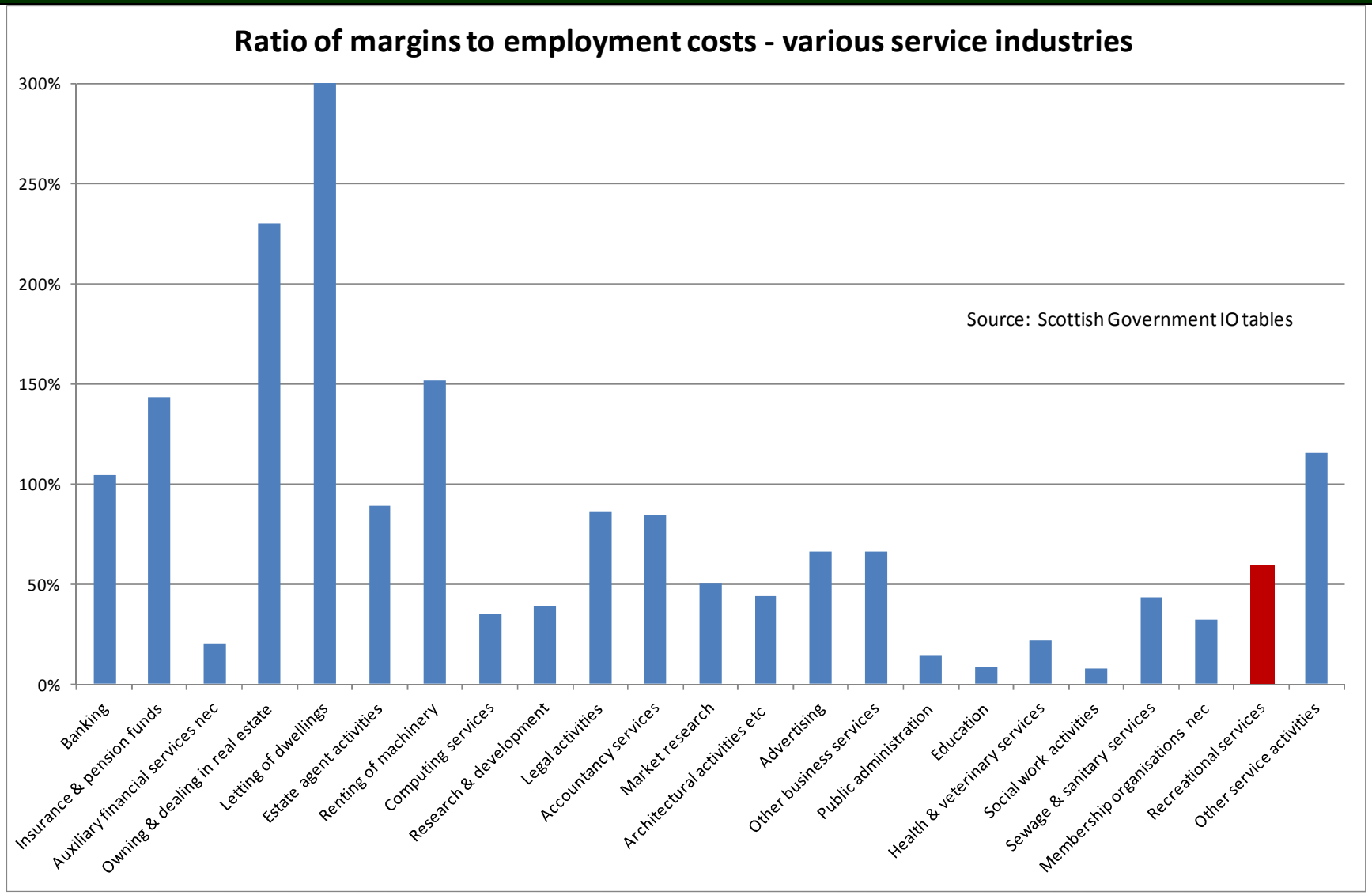
Given all of the above, set out below are estimates of **what the GVA of the sector would be if heritage and broadcasting accounts were compiled in the same way as other sectors of the economy**. We refer to these below as 'adjusted conventional accounts'.

In fulfilling this aim, the study team looked back at earlier/previous practice. For the heritage sector this is indicated in Table A3.1 (set out at the end of this Annex). It is clear that within the years shown in this table there had been at least two changes in practice, one method being used up to 1998 and a different one after 2005. It is not clear what methods were used in the interim years, as no results were published. However what does usefully emerge from Table A3.1 is that UK-wide the heritage sector has been growing, whether measured by the number of establishments, turnover, purchases or employment costs.

The first step in estimating 'conventional accounts' is to attempt to generate a 'turnover' figure for the sector. For heritage we looked at the ratio of the generality of costs in relation to employment costs. In the UK museum sector as a whole these amount to 95 per cent and in the heritage sector to 97 per cent. These figures are much less than in the recreational services in Scotland, where the figure is 250 per cent.

The other element of turnover in a commercial situation is operating margin. The ratio of this to employment costs also varies widely across service industries, unsurprisingly being low (a few percentage points) in public sector activities, but relatively high (60 per cent) in the leisure and recreational sector to which museums and galleries and broadcasting belong. The ratios are shown in Figure A3.1 overleaf.

Figure A3.1: Ratio of Margins to Employment Costs



In the heritage sector a first estimate of 'turnover' was therefore made by adding estimated purchases to the estimated wage bill and a margin equivalent to 30 per cent of employment costs. This yielded a turnover figure of approximately £400 million, or 70 per cent higher than formal accounting suggests. GVA would be approximately £250 million, or double the formal estimate.

In broadcasting the Annual Business Survey GVA estimates do not take account of the subsidy, so they approximate to normal company accounts. When looking at the ratio of turnover to employment, in the sector across the UK, as measured by the Annual Business Survey, it is exceptionally high, approximately £500 000 per employee, but the BBC accounts show turnover of £5 billion for 17,200 employees, or £290,000 per employee. Value added in the ABS is £270,000 per employee, and the BBC accounts show value added of £2.1 billion (operating surplus £0.5 billion plus salary costs £1.3 billion plus depreciation/amortisation £0.3 billion), or £122 000 per employee. Applying the ABI figures to 3,500 employed in radio and TV in Scotland would yield £1.8 billion turnover and £1.0 billion GVA, and applying the national BBC figures to the whole Scottish sector would yield £1billion and £430 million.

The BBC has recently published a response to an FOI request, indicating that just over 1,000 people (plus part-timers and freelances) are employed in BBC Scotland, at an average annual salary of £35,300. Adding on-costs and the other components of value added pro-rata would give £74,000 GVA per head, 60 per cent of the UK figure. This no doubt takes take account of different market conditions and a truncated organisational structure in Scotland, and so will conditions at other broadcasters. The ABS figures may include very highly-salaried London-based executives, and some freelancers, but any of these three sets of figures leads to many times the £64million turnover and £48million GVA reported above.

Accordingly, it was thought appropriate to reduce the ABS-based figures to about 40 per cent, to give £800 million turnover and £400 million GVA for Radio and TV.

Thus the impact of bringing heritage and broadcasting accounting practices into line with other industries is to **increase the estimate of A&CI turnover from £6.6 billion to £7.5 billion and to increase the total GVA of the A&CI from £3.3 billion to £3.8 billion**. Needless to say, as well as giving higher weight to the economic importance of the A&CI sectors, these adjustments have a visible impact on the measured overall performance of Scotland.

These should be considered preliminary estimates which can probably be refined once issues with the National Accounts have been resolved and the Scottish Government has published new input output tables for Scotland.

Table A3.1: Extract from the Annual Business Survey issued November 2011

Standard Industrial Classification (Revised 2007) Section Division Group Class	Description	Year	Number of enterprises	Total turnover	Approximate gross value added at basic prices	Total purchases of goods, materials and services	Total employment - point in time	Total employment - average during the year	Total employment costs	Total net capital expenditure	Total net capital expenditure- acquisitions	Total net capital expenditure - disposals	Total stocks and work in progress - value at end of year	Total stocks and work in progress - value at beginning of year	Total stocks and work in progress - increase during year
			Number	£ million	£ million	£ million	Thousand	Thousand	£ million	£ million	£ million	£ million	£ million	£ million	£ million
R	Arts, entertainment and recreation	2008	58,389	87,649	15,588	69,521	593	585	9,624	2,411	2,764	353	195	194	2
		2009	56,398	89,736	17,055	70,142	593	597	10,440	2,037	2,288	251	194	221	-27
		2010	55,866	91,110	15,230	73,082	714	..	10,783	1,937	2,316	378	177	172	6
91	Libraries, archives, museums and other cultural activities	2008	1,659	1,458	9	1,446	52	51	1,113	511	534	23	7	11	-4
		2009	1,605	1,144	28	1,201	57	60	1,159	205	240	35	22	13	9
		2010	1,597	1,294	162	1,210	107	..	1,254	281	339	58	16	21	-5
91.01	Library and archive activities	2008	329	141	7	134	6	6	133	25	28	2	-	-	-
		2009	322	76	-9	85	7	7	171	18	27	8	-	-	-
		2010	314	264	94	187	47	..	196	46	51	5	1	1	-
91.02	Museum activities	2008	523	380	-60	436	18	18	472	328	332	4	1	1	1
		2009	530	313	-150	462	19	20	468	121	129	7	1	1	-1
		2010	529	375	-69	443	29	..	468	162	186	24	1	3	-2
91.03	Operation of historical sites and buildings and similar visitor attractions	2008	489	377	59	321	11	11	198	63	78	15	6	10	-4
		2009	444	309	111	216	13	14	185	23	35	13	18	8	10
		2010	434	338	106	236	12	..	187	3	29	26	13	16	-3
91.04	Botanical and zoological gardens and nature reserve activities	2008	318	559	4	556	17	17	310	95	97	2	-	-	-
		2009	309	447	76	439	18	19	335	43	50	7	3	3	-1
		2010	320	317	30	344	20	..	404	70	74	3	1	1	-

Source: ABS UK, Section R (Arts, Entertainment and Recreation). Release Date 17/11/2011. Data has been collected under SIC (2007). Please see ABS Background Information for further information.

Table A3.2: Extract from the Annual Business Survey issued June 2009

ANNUAL BUSINESS INQUIRY

SECTION O - OTHER COMMUNITY, SOCIAL AND PERSONAL SERVICE ACTIVITIES

Release Date 16/06/2009

Data for 2003-2007 has been collected under SIC(2003). Please see ABI what's new page for further information.

Standard Industrial Classification (Revised 1992) (Revised 2003) Subsection Division Group Class	Description	Year	Number of enterprises	Total turnover	Approximate gross value added at basic prices	Total purchases of goods, materials and services	Total employment - point in time	Total employment - average during the year	Total employment costs	Total net capital expenditure	Total net capital expenditure- acquisitions	Total net capital expenditure - disposals	Total stocks and work in progress - value at end of year	Total stocks and work in progress - value at beginning of year	Total stocks and work in progress - increase during year
			Number	£ million	£ million	£ million	Thousand	Thousand	£ million	£ million	£ million	£ million	£ million	£ million	£ million
92.52	Museum activities and preservation of historical sites and buildings	1995	927	284	114	170	..	..	139	80	87	7	-	-	-
		1996	958	373	162	211	..	..	176	60	60	-	-	-	-
		1997	920	544	190	358	..	..	322	143	162	19	2	1	1
		1998	885	511	73	441	27	27	362	177	187	10	..	..	..
		1999	911	522	*	*	32	31	475	194	203	9	*	*	*
		2000	888	400	*	*	23	24	371	*	*	*	3	2	1
		2001	884	494	*	*	25	25	409	154	157	2	*	*	*
		2002	906	518	*	*	27	27	482	143	*	*	89	86	4
		2003	954	757	112	646	30	31	590	203	211	7	13	21	-8
		2004	980	758	*	*	31	32	649	161	175	15	5	8	-3
		2005	1 021	848	96	766	35	36	689	180	188	7	9	3	6
		2006	1 060	777	29	752	36	36	715	134	213	78	5	9	-4
		2007	1 087	944	137	827	38	37	703	174	204	30	12	8	4

ANNEX 4: LIST OF SECTOR CONSULTATION EVENT ATTENDEES

Table A4.1: List of Attendees at the sector consultation events

Name	Organisation
Andrew Bruce	Architect
Mark Jenkins	Arts Forum representing film
David Gardner	Atlantic Edge Music Services
Francis McKee	Centre for Contemporary Arts
Emma Walker	Craftscotland
Lyall Bruce	Creative Dundee (also involved in NEoN)
Shaun Arnold	Creative Hi / Go Events
Noelle Henderson	Creative Links Officer, Shetland Islands Council
Emily Wyndham Gray	Creative Producer, Scottish Sculpture Workshop
Elisabeth Zelfer	Creative Scotland
David Stevenson	DCA
Sorcha Carey	Director Edinburgh Art Festival
Sam Eccles	Director Promotions Arts Network
Emma Nicolson	Director, ATLAS arts
Colin Marr	Director, Eden Court
Georgina Follet	DoJ/Dundee University
Jeanette Paul	Duncan of Jordanstone College of Art, WASPS and PIER
Prof. Arthur Watson	Duncan of Jordanstone College of Art, WASPS and PIER
Tommy Coutts	Economic Development Dept. Shetland Islands Council
James Shaw	Edinburgh International Book Festival
Faith Liddell	Festivals Edinburgh
James McVeigh	Festivals Edinburgh
Brian Oheadhra	Gaelic Arts and Culture Officer
Simon Biggam	Glasgow Arts
Jaki McDougall	Glasgow Film Theatre
Muriel Ann MacLeod	H&I theatre Network
Pamela Connacher	Hi - Arts Fashion/crafts
Robert Livingston	Hi-Arts
Iain Hamilton	Highlands & Islands Enterprise
Anne Marie Reid	Highlands & Islands Enterprise
Neil Ross	Highlands & Islands Enterprise
Judi Menabney	Highlife Highland [Highland Council]
Chris Lee	HITN Chair and Director of Wildbird
Richard Ingleby	Ingleby gallery
Ken Hay	Interim CEO Filmhouse
Cathy Shankland	Inverness Museum & Art Gallery
Billy Gartley	Leisure & Culture Dundee
Eddie Dick	Makar Productions

Table A4.1: List of Attendees at the sector consultation events	
Name	**Organisation**
Nick Fearne	Moray Council Arts Development Officer
Lindsay Gordon	Peacock (Aberdeen)
John Durnin	Pitlochry Festival Theatre
Susan Christie	Public Art Agency
Marion Sinclair	Publishing Scotland
Ron Inglis	Regional Screen Scotland
Paul Hackett	Scottish Ballet
Marc Lambert	Scottish Books Trust
James MacGillivray	Scottish Dance Theatre
Alex Reedijk	Scottish Opera
Gwilym Gibbons	Shetland Arts, Creative Scotland Board
Mhari Pottinger	Shetland Folk Festival
Ros Lamont	The Audience Business
Anna Stapleton	The Citizens Theatre
Neil Firth	The Pier
Donna Heddle	UHI Cultural Studies
Mark Reid	Union Advertising
Ben Spencer	Visual Arts & Galleries Association
David Cook	WASPS

ANNEX 5: ASSESSING THE ARTS & CREATIVE INDUSTRIES AND TOURISM

Section 5 of the main report includes an assessment of the role and contribution of the Arts & Creative Industries to tourism and the visitor economy. This Annex provides greater detail of the methods and the model used in this assessment.

Summary of Approach and Method

One of the great challenges facing operators in the tourism industry and destination managers is developing and understanding what motivates people to choose one particular destination or journey, and to pick it again after an initial visit.

One of the classic research summaries (Ritchie & Crouch, 2003) lists seven types of core resources and attractors:

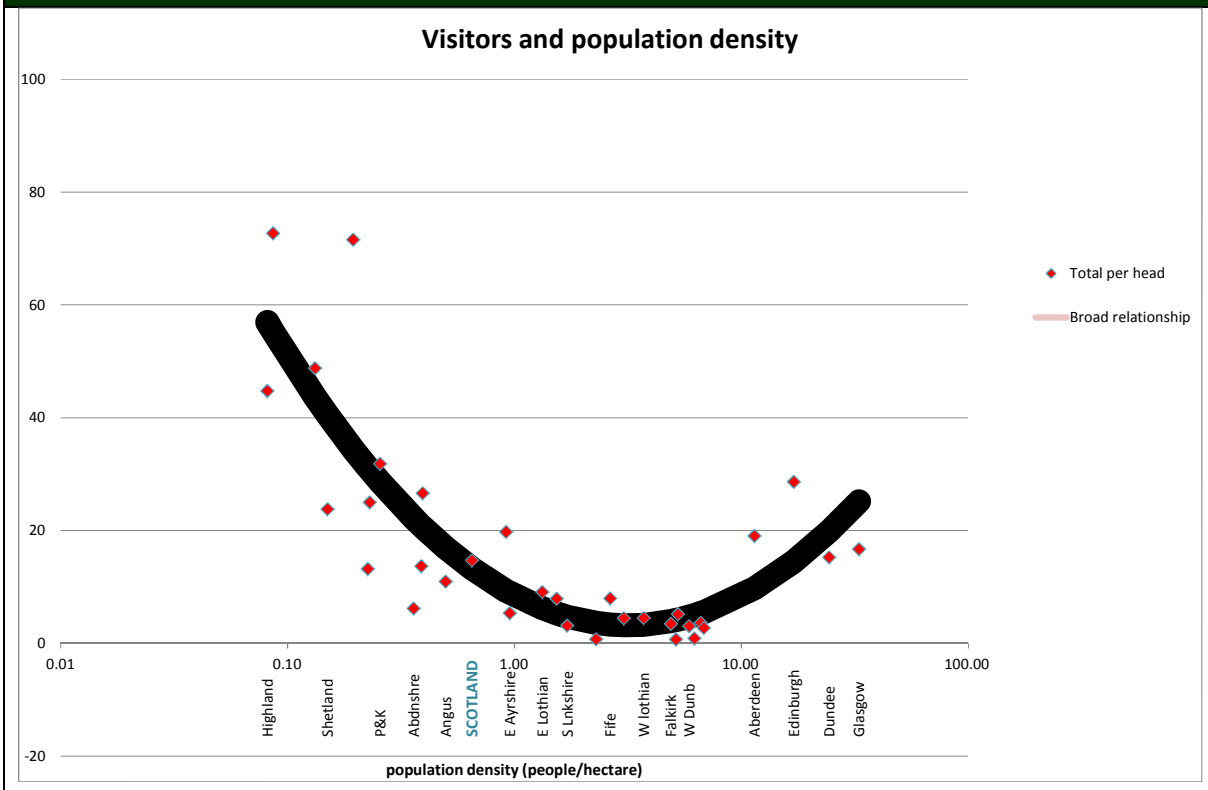
- The physiography of the destination
- The culture and history of the destination
- The range and mix of activities available
- The special events offered
- The components of the destination superstructure
- The types of entertainment found
- The strength of ties between tourists and the market

With the exception of physiography, the Arts & Creative Industries and activities addressed in this report can contribute to all of resources/attractors. However it is not easy to *measure* their contribution, certainly not in a general way at national level.

An attempt has been made to obtain some measures of destination impact using the statistical methods of econometrics. This entails examining the differences between places that attract many tourists, and those that attract very few. The method cannot, therefore, be applied using conventional tourism statistics. That is because these typically refer either to popular destinations, or to tourism-specific administrative areas (such as tourist board areas) which have been created to cover a territory in a way that makes sense organisationally. However, local authority data does not suffer from either of these drawbacks. Using data from across the 32 Council areas, cogentsi first successfully measured the strength of different physiographic attractors to Scotland in a study for the Forestry Commission (cogentsi report 206a, 2007).

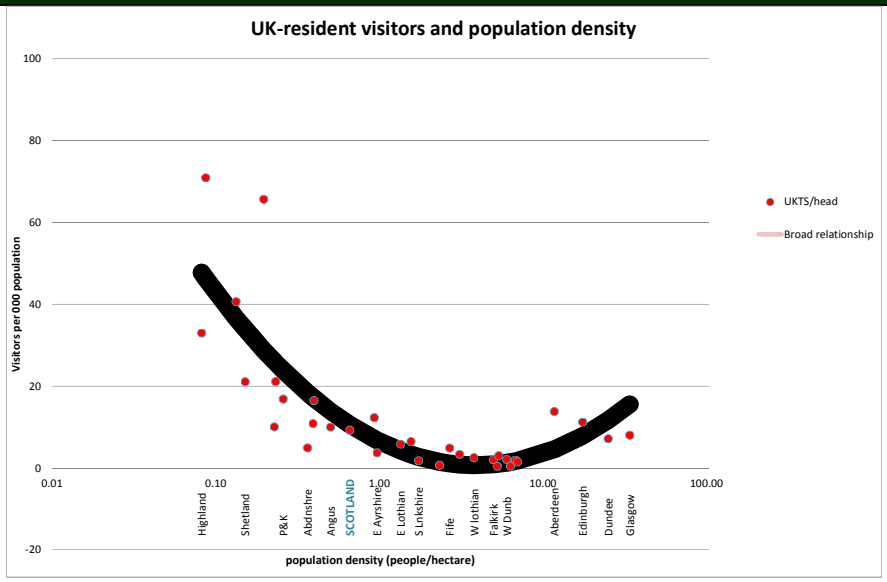
That study found that visitors were attracted either to very sparsely-populated areas (presumably for their natural beauty), or to the places where Scotland's people cluster densely together. This can be broadly summarised by looking at the relationship between the number of visitors and population density, as set out overleaf in Figure A5.1:

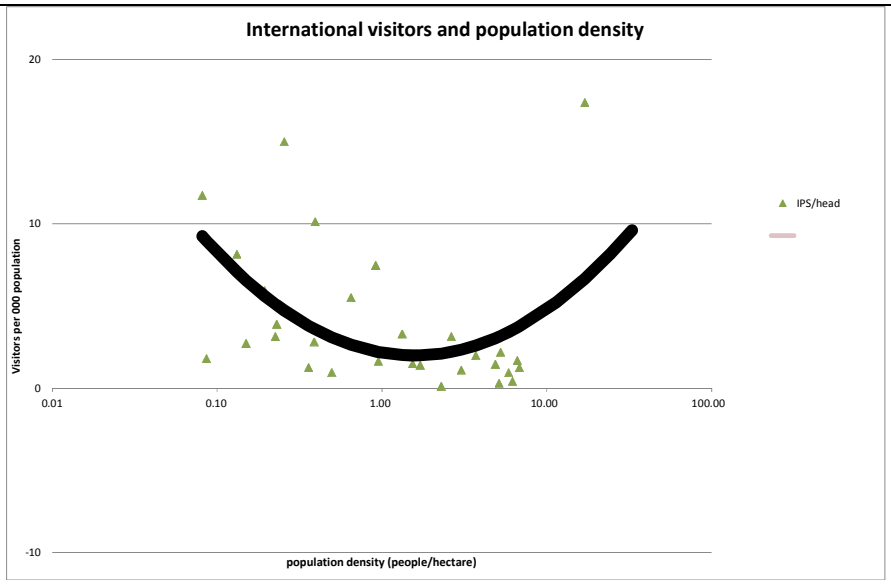
Figure A5.1: Relationship between Visitors and Population Density

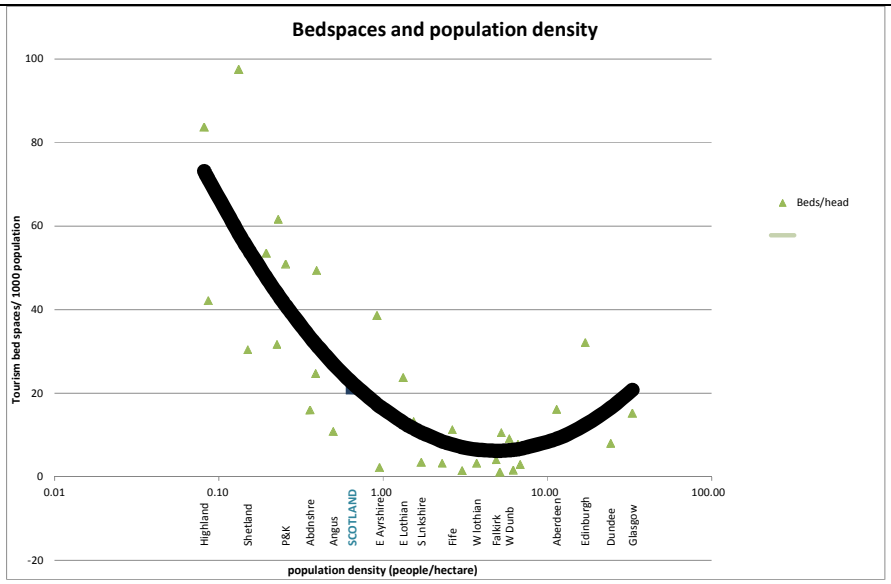


The figure shows that, broadly, few visitors are attracted to the urban and semi-urban council areas where population densities are moderate. Rural areas attract more people the more sparsely populated they are, and the four large cities tend to attract more people the more densely populated they are. Similar, but separate relationships can be shown for UK-resident visitors, overseas visitors and for the provision of tourist accommodation and are presented in Figure A5.2 overleaf.

Figure A5.2: Relationship between Visitors (UK, International) and Bed Spaces - Population Density



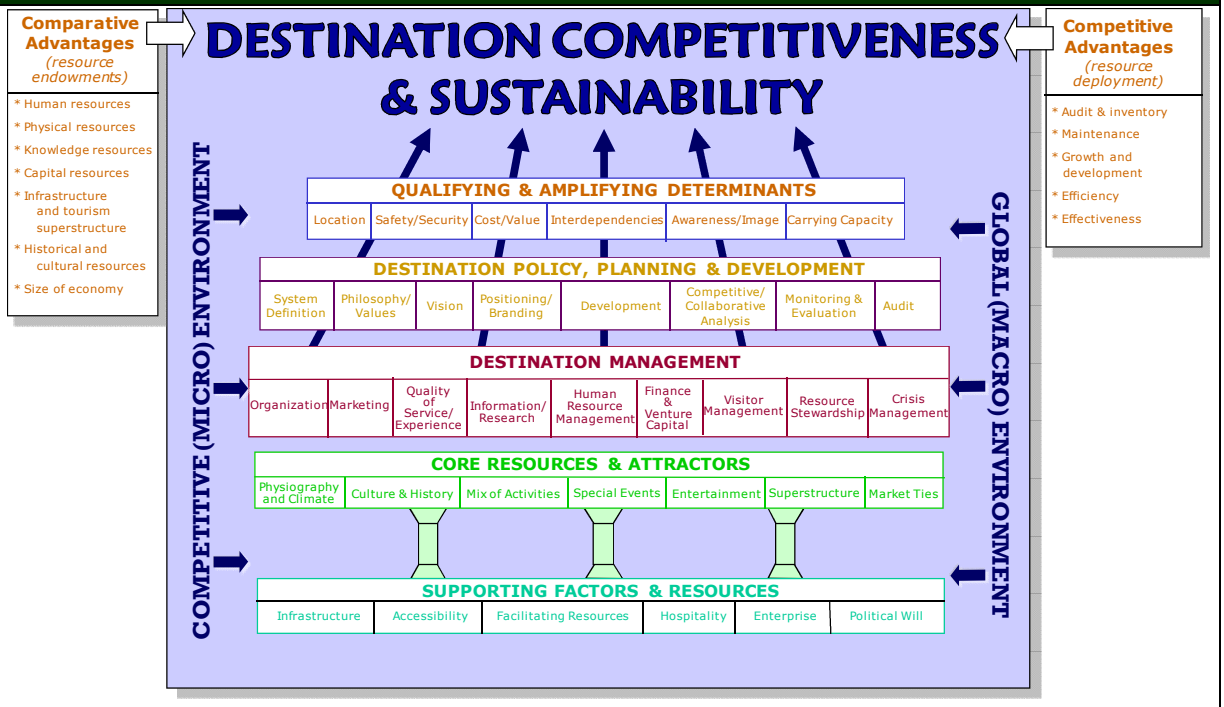




To develop this understanding the analysis sought to measure the predominately natural things that motivate the rising line to the left of the graph – the density of mountains and lochs, the availability and extent of coastline, forests and their accessibility – and the features that motivate the city tourism to the right – predominantly artifices of human creation.

Ritchie and Crouch express their model diagrammatically as follows:

Figure A5.3: Core Resources and Attractors (Ritchie & Crouch, 2003)



One of the issues in quantifying this model is the availability of data. The variables we have succeeded in including in the model so far for Scotland are as follows:

Table A5.1: Variables included in the Model

Predominantly rural determinants	Predominantly urban determinants	General determinants
Area of accessible forest	Listed buildings	Distance from London
Area of other forest	Historic buildings	Distance from central belt
Mountains: Munros/ha	Museum/heritage employment	Historic monuments
Availability of coast	Performing arts employment	
Coast length in relation to area	Music employment	
Island?		
Inland water/ loch area		

The variables listed in Table A5.1 are not a full set of the variables within the model. To capture any effects of solitude on the one hand and gregariousness on the other which

are *not* reflected in the variables listed a curvilinear relationship with population density has been retained within the model.

Some form of accommodation is a prerequisite for overnight tourism, and in the great majority of cases it is commercially-provided bedspaces. The businesses that invest in and manage those bedspaces are not blindly saying 'we'll provide the rooms and visitors will come'. They are attempting themselves to second-guess what tourists want in a destination.

Therefore the role of accommodation estimated in the model is twofold. The provision of accommodation not only shapes, but is shaped by, the desire of people to visit an area. Because it is shaped by tourist desires, the first step was to model the pattern of accommodation provision, based on the determinants of tourism. Secondly, visiting behaviour for both UK-based and international tourists has been modelled, including the availability of commercial bedspaces as one of the independent variables. Finally a 'reduced form' model has been estimated, which aims to measure the ultimate effect of the motivating features, without the intermediate influence of the accommodation business.

Results from Model

Based on running the model set out above, the regression results are as follows:

Table A5.2: Regression Results

Independent variable	Dependent variables				
(some are subject to transformations not shown)	No of beds/hd	UK residents	UK residents	International visitors	International visitors
Intercept	-1.344	-2.325	-1.678	3.356	4.071
Population density	-0.046	-0.305	-0.283	-0.467	-0.442
density ^2	0.084	0.075	0.034	0.087	0.042
access forest %	6.929	3.710	0.375	4.246	0.558
inaccess forest %	3.328	-2.476	-4.078	2.580	0.808
Munro /m2	-2.638	2.191	3.461	8.699	10.103
Coastal dummy	1.346	1.097	0.450	1.273	0.557
Island dummy	2.431	1.200	0.029	-3.156	-4.450
Coast /area	-0.223	0.001	0.108	0.502	0.620
Loch%	274.766	-494.018	-626.272	-887.691	-1033.966
ln cbdist	-0.066	0.244	0.275	-0.350	-0.315
ln lon dist	0.431	-0.786	-0.994	-1.061	-1.290
ln(Monuments/ hd)	0.004	-0.178	-0.180	-0.234	-0.236
ln(Museum and heritage empmt/ hd*1000)	0.045	0.152	0.130	0.083	0.059
ln(hist bldgs/ hd)	-0.070	0.048	0.081	0.076	0.113
ln(Listeds /hd)	0.642	0.116	-0.193	-0.372	-0.714
ln (perfarts emp/hd)	0.196	0.053	-0.042	0.246	0.141
ln(music emp/hd)	0.041	-0.061	-0.080	-0.033	-0.055
ln (Beds /hd)	-	-	0.481	-	0.532
Adjusted R2	0.825	0.844	0.872	0.572	0.602
significance	0.005%	0.002%	0.002%	1.212%	1.145%
df	14	14	13	14	13

Source: Results from analysis carried out by cogentsi, 2012

General results

Overall significance levels are high for accommodation provision and for UK-resident visitors, and moderately high for international visitors. Almost all variables have the expected sign, although there are only a handful of individual variables in each regression where the coefficients show high levels of statistical significance. These were examined using standard stepwise regression techniques.

The conclusions about the role of each creative industry variable below are therefore drawn from the results above and their significance levels, and from the results of stepwise regressions to eliminate (or to avoid including) non-significant variables. This report is not the place for detailed exploration of non-creative industry variables, or for detailed technical expositions of the statistical methodology, and a separate paper is being prepared outwith the scope of this project.

Beds

More than 82 per cent of the variation in accommodation provision between Council areas can be explained by the seventeen explanatory variables. The coefficients measured are as expected, except that mountains appear to be a deterrent to accommodation provision (not statistically significant), perhaps due to cost/practicality reasons.

Of the three creative-industry related variables, performing arts employment has by far the strongest influence on accommodation provision, and is one of only 5/6 variables retained in a stepwise regression where the more equivocal influences are dropped out of the model.

In its turn, the availability of accommodation is amongst the most powerful determinants of both UK and international visitors, with a slightly larger coefficient for international visitors, perhaps reflecting the greater importance of visits to friends and relatives in the domestic sector.

UK-resident visitors

Accommodation is a major influence on UK visitors. The impact of the performing arts industry on domestic tourism appears to be felt entirely indirectly, through incentivising accommodation provision. Once this indirect effect has been accounted for, a small but non-significant negative further effect is measured. The heritage industry, on the other hand, does have a positive significant impact on domestic visitors not only through encouraging bed provision but additionally, on top of that through directly motivating visits. The size of the music industry in a Council area does not appear to play a significant role in attracting visitors – indeed, its sign in the regressions is negative, but non-significant.

Overseas visitors

Accommodation is an even stronger influence on overseas visitors. Both the performing arts industry and the heritage industry have strong effects not only indirectly, via accommodation provision, but even stronger ones in their own right. This leads to a very striking elasticity of 0.25 for the performing arts. This may be associated with the Edinburgh International Festivals and Fringe, which are almost certainly significant factors lifting Edinburgh even above the general trend where the 'buzz' associated with a dense population attracts visitors to a city.

Conclusions and Estimates of Visitor Impact of Arts & Creative Industries

Based on the above results from the regression model, the most pertinent visitor estimates are set out in Table A5.3 below, showing the Arts & Creative Industries elasticities for Tourism. To provide an estimate of the impact these elasticities have on expenditure they can be applied to estimated tourism accounts for Scotland, and the results from this are set out in Table A5.4 below.

Table A5.3: Summary of Arts & Creative Industry elasticities - Tourism			
Tourism bedspace accommodation - model elasticities			
	elasticity to Heritage employment	*elasticity to Performing Arts employment*	*elasticity to Music employment*
	0.045	0.196	0.041
UK visitor numbers - model elasticities			
Elasticity of visitor numbers to bed provision			0.481
	elasticity to Heritage employment	*elasticity to Performing Arts employment*	*elasticity to Music employment*
via bedspace provision	0.022	0.094	0.020
in addition to bed effects	0.130	-0.042	-0.080
Total	0.152	0.053	-0.061
International visitor numbers - model elasticities			
Elasticity of visitor numbers to bed provision			0.532
	elasticity to Heritage employment	*elasticity to Performing Arts employment*	*elasticity to Music employment*
via bedspace provision	0.024	0.104	0.022
in addition to bed effects	0.059	0.141	-0.055
Total	0.083	0.246	-0.033
Source: cogentsi, 2012			

Table A5.4: Estimates of Tourism Spending and GVA - Arts & Creative Industries				
Tourism spending and GVA motivated by heritage				
	Overseas expenditure	UK visitor expenditure	Total	
Annual expenditure	1.500	2.600	4.100	
Elasticity at margin	0.083	0.152	0.127	
Motivated by heritage	0.125	0.394	0.519	
Value added content of this (based on Scottish Tourism Satellite Accounts)				0.142
Tourism spending and GVA motivated by performing arts				
	Overseas expenditure	UK visitor expenditure	Total	
Annual expenditure	1.500	2.600	4.100	
Elasticity at margin	0.246	0.053	0.123	
Motivated by performing arts	0.368	0.137	0.505	
Value added content of this (based on Scottish Tourism Satellite Accounts)				0.138
Source: cogentsi, 2012				

Thus, tourism expenditure of over £1 billion can be ascribed to overnight tourism motivated by the Arts and Creative Industries, and this gives rise to a direct GVA of £280 million. It is likely that a similar sum can be ascribed to day visits. (Indicatively, day visitor expenditure in the Tourism Satellite Accounts is £3 billion compared to £4.1 billion for overnight visits, but the latest Leisure Day Visit Survey results were published too late to be included in this study). Thus it is likely that tourism effect add about a third to the direct effects traceable to creative industries. It must be stressed that these estimates are inherently more uncertain than those elsewhere in the report, but nevertheless they are believed to be unbiased and suitable for policy analysis.

ANNEX 6: BIBLIOGRAPHY & EXAMPLE ECONOMIC IMPACT STUDIES

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