Creative Scotland Research

Scoping Study into the Economic Impact of the Arts and Creative Industries in Scotland

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Scoping Study into the Economic Impact of the Arts and Creative Industries in Scotland

Report for Creative Scotland

EKOS Limited, St. George's Studios, 93-97 St. George's Road, Glasgow, G3 6JA
Reg 145099

Telephone: 0141 353 1994 Web: www.ekos-consultants.co.uk

Direct enquiries regarding this report should be submitted to:
Iain Jenkins, Director
Email: iain.jenkins@ekos.co.uk
Tel: 0141 353 1994

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Executive Summary

Background

The Arts and Creative Industries (A&CI) have attracted increasing world-wide policy interest over the last decade or so, reflecting their importance as a driver of economic growth and as a catalyst for social development. This has been accompanied by the emergence of an extensive body of research which has sought to examine both the scale of the A&CI and/or some of its component sub-sectors and activities, and its linkages to and influences on wider economic activity. UK-based researchers have been at the forefront of these efforts, but there have also been numerous contributions from academics and practitioners elsewhere, particularly in Europe and North America.

Creative Scotland has a remit to work across the arts, culture, film, TV and the creative industries. Although formed through the merger of the Scottish Arts Council and Scottish Screen, the organisation is seeking to develop a new cultural agency model. It is important to Creative Scotland to understand the contribution made to the Scottish economy across the full breadth of the A&CI. Creative Scotland's requirements are therefore, for accurate information:

- on the economic impact of the A&CI at the Scottish level;
- on how its impact has changed over time; and
- that facilitates 'drilling down' to assess impacts on specific geographies or those generated by particular sub-sectors.

This report presents the conclusions and recommendations from a study commissioned by Creative Scotland. The overall purpose was to identify an appropriate approach and method for examining the economic impact of the A&CI in Scotland to inform a second stage of work in which a full economic impact study (EIS) will be undertaken. In summary, the study had three principal aims*, viz*:

- to recommend an approach and define what is and what is not achievable through an EIS of Scotland's A&CI;
- to recommend a model and approach for gathering information on the impact of Scotland's A&CI that can be easily replicated by partners, organisations, collectives and individuals on a longitudinal basis; and

- to explore whether the second stage of the work (the EIS) could be usefully undertaken in partnership with others at the UK, Scottish and local levels and, if so, to recommend the best approaches that should be adopted.

Defining the Arts and Creative Industries

There is a prior need to define what the A&CI comprises and two main approaches, which are not mutually exclusive, have typically been applied in previous research efforts, viz:

- sector-based definition of the cluster; and
- supply chain analyses.

The former is best illustrated by the Department of Culture, Media and Sport (DCMS) approach which defines "creative industries" as ***'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 intellectual property'***. In practical terms, this results in the 13 sector definition of the A&CI which has commonly been the basis for analysis at the regional and national levels in the UK and overseas, as follows:

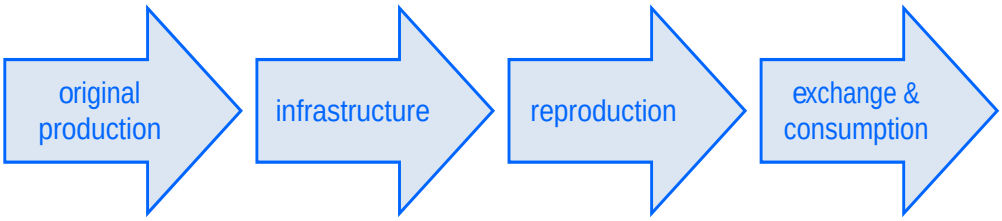
1. advertising
2. architecture
3. art and antiques
4. crafts
5. design
6. designer fashion
7. video, film and photography
8. digital and entertainment media
9. music
10. visual and performing arts
11. publishing
12. software and electronic publishing
13. television and radio

This also corresponds closely with the sectoral definition adopted by the Scottish Government.

The main alternative, is the Creative Industries Production System (CIPS) approach, shown below, which seeks to scale the influence of the A&CI within four distinct phases of the value production process (from original production, through infrastructure and reproduction to exchange and consumption) where these can be

overlaid onto sectoral groupings to examine the relative concentrations of activity at each phase of the CIPS.

Creative Industries Production System (CIPS)



Both approaches are considered feasible at the Scottish and sub-national levels and should be combined in any future EIS.

Analytical Framework

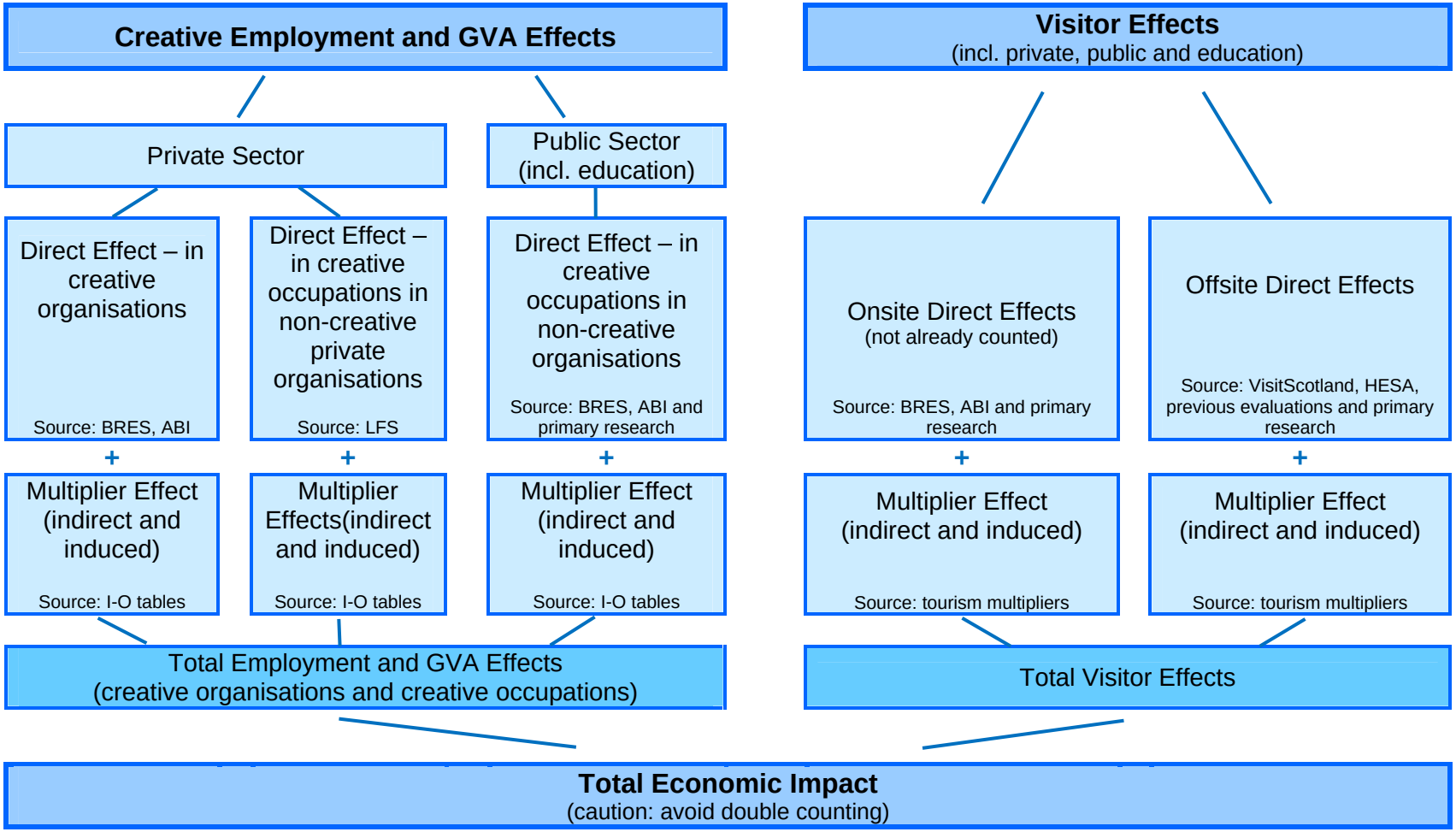
An analytical framework for the EIS has been derived, based on the orthodox approach to economic impact assessment, which illustrates the various routes through which the A&CI generate economic impact. The framework, shown over the page, forms the basis for the approach recommended for the EIS, and helps define the necessary scope of data capture and analysis.

The framework suggests that the EIS should seek to capture the extent of economic impact associated with A&CI activity across a range of contexts, including the contributions:

- from organisations that are suppliers of A&CI to final consumers;
- made by A&CI activities in other sectors not within the A&CI;
- associated with the visitor expenditure of those attracted by A&CI activity; and
- made by the public sector, including local authorities, sector support organisations and educational institutions.

Wherever possible and relevant, the EIS should attempt to capture the direct, indirect and induced effects for key economic indicators.

Recommended Approach



This framework contrasts with many past studies of the aggregate impact of the A&CI, which have tended to:

- focus solely on the direct economic impacts that can be attributed to the A&CI, ignoring the additional impacts that might emerge through supplier linkage and income multiplier effects; and
- ignore the contributions that can be attributed to wider public sector activity, or which emerge through the influence of the A&CI on tourism activity.

Data Sources

An important conclusion to emerge from the study is that it is feasible to implement much of the proposed analytical framework through making best use of the secondary data that is available from official and other sources. This conclusion is not, however, universally valid, and there are some data limitations that will need to be taken into account by any EIS. These include that:

- data from some key official sources are subject to suppression procedures due to confidentiality issues. The practical impact of this is that there are more “missing values” for lower levels of geographical aggregation; and
- there are no secondary data available for certain components of the analytical framework and some primary data generation will be necessary. This applies in the main to certain aspects of the A&CI’s impact generated by relevant public sector and educational activity, particularly through provision by local authorities and further education colleges. These would not be major exercises, and in the case of local authorities can build on past work conducted by EKOS on behalf of VOCAL.

Stakeholder Views

In the course of the study, key partners and wider stakeholders with an interest in the A&CI in Scotland were consulted to seek input on method issues and gauge interest in a collaborative approach to the work.

Very few had any fixed views on the kinds of methods that should be used, and those that did tended to lend their support to the type of approach given in the

analytical framework. In summary, the feedback on methodological approaches tended to favour:

- an approach based as far as possible on existing secondary datasets; and
- a method that includes indirect and induced effects to provide a fuller assessment of the economic impacts of the A&CI.

While none of the partners consulted were in a position to make a formal commitment of resources to a future EIS, all expressed an interest in further discussions once a method had been developed and agreed.

Conclusions

The main study conclusions are that the EIS should:

- focus on the economic impacts of the A&CI as a whole;
- be largely desk-based, making appropriate use of orthodox economic impact assessment techniques and data that are already available in the public domain or held by partner organisations; and
- take account of the impacts associated with public sector activity and in relation to visitor impacts, but that this should again focus as much as possible on the use of existing secondary data. It may be necessary to undertake some primary research in relation to public sector activity, but this should focus on known data gaps.

The broad approach recommended, is both cost effective and achievable, and will fulfil the essential criteria of robustness, replicability and transparency. It will not, however, be without problems, especially relating to gaps or data that are out of date. Furthermore, while data issues will increase when moving from Scottish level estimates, many of the estimates that would be generated could be presented:

- at a national and sub-Scottish level; and
- by the different sub-sectors of the A&CI.

The table below summarises the advantages and disadvantages of the recommended approach and the main alternative of deriving estimates directly from primary research targeted at A&CI organisations.

Option	Advantages	Disadvantages
Recommended Analytical Framework	• Relatively less costly than alternatives • Comprehensive in coverage • Will facilitate valid comparisons over time and against other UK regions and nations • Can be disaggregated geographically and sectorally • Has been tested	• Some data gaps, some of which would be expensive to fill • Timing of data means estimates always at least one year out of date • Data suppression can frustrate disaggregated analysis • Data access will sometimes be dependent on co-operation of other agencies
Primary Research	• Can be bespoke to specific needs • Will give up to date information • Can include a wider set of indicators as well as qualitative data • Can make use of secondary data to examine supplier linkage and multiplier effects	• Relatively expensive to implement • Will take longer to implement • Lack of population information will make it difficult to check statistical validity • Will limit scope for benchmarking and analysis of trends

It may also be useful to consider more detailed analyses as a series of case studies as additions to the main study. These could focus on specific sub-sectors or geographic areas, or on the contribution of the public sector.

Given what is currently available and the timing of data releases for different datasets, it would seem sensible for the EIS to focus on either 2009 which could be accommodated immediately, or 2010 which would be feasible from early 2012.

Creative Scotland does not work in isolation, but collaborates with a wide range of stakeholders with an interest in the A&CI in Scotland. There is a general interest among partners regarding the idea of a single robust assessment of the economic impacts of the A&CI in Scotland and while none were willing, at this stage, to commit resources many would consider the merits of a more specific proposal when it was brought forward. It is also worth bearing in mind that many of Creative Scotland's partners could make valuable non-financial contributions. For example, COSLA or VOCAL would be a useful route into the collection of data from local authority partners, and VisitScotland can provide important visitor data.

Options for Additional Data Analysis and Extensions

The recommended approach offers potential for additional, more fine-grained analysis of the assembled datasets. The table below outlines these options and our recommendations.

Option	Description	Recommendation
Indicators	Existing economic statistics provide data across a range of indicators including employment, business stock, GVA, turnover and labour costs. There is therefore a choice as to which indicators to report.	The study should, at a minimum, report employment and GVA impacts, although business stock would also be a useful measure.
Sub-Scottish level analysis	The data can be sorted to provide analyses at sub-Scottish levels. However, it is important to note that as the level of geographic disaggregation increases, the likelihood that data will be suppressed also increases. Survey based data sets (e.g. Labour Force Survey) will also not provide robust data for small geographic areas.	The proposed method will allow robust disaggregation at the level of city regions and larger geographic areas such as the Highlands and Islands and South of Scotland. Some discrete local authority areas may present more challenges, particularly where the concentration of A&CI is low.
Sub-sector analysis	The data can also be sorted to provide analysis at sub-sector level within the wider A&CI grouping. However, this will be limited by the coverage offered by SIC codes and some sectors will be poorly captured (e.g. design, music).	The study should provide an analysis by the sub-sectors of the A&CI as per the definition provided above.

In addition to these areas of finer-grained analysis, the study could and should be extended via a series of more in depth case study analyses. These case studies could extend the general method through analysis of other relevant data sources and even through targeted primary research. Case study options include:

- more in-depth analysis of a specific sub-sector. For example, a case study of the TV sector could usefully analyse data on the value of network and regional television production spend in Scotland available from Ofcom or direct from broadcasters, as well as primary research with production

companies and broadcasters since this is a more limited population than the whole of the A&CI;

- a case study analysis of the advertising industry could also examine data sources such as media spend data (available through Neilsen Research) as well as, again, manageable primary research with the sector;
- geographic case studies could focus on key cities, drawing comparisons with key 'creative cities' across the UK using secondary data sources (since most offer UK wide coverage) while also capturing other data that may be produced locally. This could usefully cover each of Scotland's four main city regions (Glasgow, Edinburgh, Dundee and Aberdeen) and data could be extracted at these levels. As we would expect a concentration of A&CI activity within the city regions, issues with data suppression are likely to be limited; and
- a deeper examination of the public sector role in the A&CI would also be a useful case study, albeit one that might require more extensive primary research.

Our recommendation would be to undertake two case studies drawn from the above suggestions.

Recommendations

The report has made 17 detailed recommendations on the format and scope of an EIS. These are given below:

Summary of Detailed Recommendations	
1.	Any EIS should adopt the DCMS definition of A&CI, while it will also be possible to capture and present results according to the Scottish Government grouping. Adopting the DCMS definition will enable wider comparisons of the results of an EIS for Scotland with the various results available for the UK as a whole and for some of its constituent nations and regions.
2.	A future EIS could also apply the CIPS approach to present more detail on the nature of the A&CI in Scotland, and to enable comparisons to previous studies that have applied this approach to Scotland, and some of its sub regions.
3.	The minimum scope of any EIS should be to examine the GVA and employment associated with the A&CI. While it will be possible to provide at least a partial analysis of other indicators of interest, GVA and employment should be the minimum scope of any Scottish level assessment. This approach will provide the means of comparing the A&CI's contribution against that of other sectors in terms of the two most commonly applied indicators. It will also provide the basis for replicating the study to examine time trends.

4. Any future EIS should seek to go beyond the basic analysis of direct effects that has been the feature of many past studies of the sector at the sub-Scottish, Scottish and UK levels. This is to provide a fuller assessment of the A&CI contribution to economic activity.
5. The EIS needs to take into account the economic activity generated by visitor activity induced by the A&CI.
6. The EIS needs to focus on gross impacts, and does not need to examine additionality factors normally applied to convert gross to net impacts.
7. Any EIS must recognise that:
   - some proportion of economic impact will not be directly observable through economic statistics gathered on the basis of the main product or service offering of organisations (the normal way in which many economic statistics are presented). This has been recognised by other studies and some attempt made to get around the issue;
   - the public sector could be a major source of economic impact, especially in areas such as the provision of A&CI related education and training, as well as development services to A&CI organisations. Again, for many public sector organisations this will only be a part of a wider service portfolio and the A&CI component might need to be disentangled; and
   - there is the issue of how to deal with "unpaid" work by volunteers. In some cases this has been the subject of separate studies, confirming that the scale of volunteering is sometimes substantial.
8. The EIS needs to focus on the impacts associated with the supply of all A&CI goods and services whether these are marketed or not. Valuation techniques are not required to assess the scale of activity associated with the latter, as this will be captured by examining supply-side indicators.
9. The EIS should include treatment of the economic activity associated with the supply of goods and services to internal customers.
10. The EIS should include treatment of the off-site impacts associated with visitor expenditure generated by A&CI. Data availability will be an issue, and care will be needed to avoid double counting.
11. The EIS should include examination of the A&CI activity generated by the public sector. It is, however, recognised, that secondary data constraints may mean that only a partial analysis will be possible for some aspects of this contribution, without extensive and expensive primary data generation. Care will again be needed to avoid double-counting.
12. A future EIS should rely mainly on existing secondary data from official sources, and avoid overly expensive primary data generation exercises in areas such as compiling new tourism multipliers. While there will be some data gaps, and some instances where there is not an exact fit with what the analytical framework implies is required, there should only be a minimal need for ad hoc surveys targeted on specific issues and/or target groups.
13. While there are recognised issues that can impact on the accuracy of estimates, it is recommended that the SIC classification given in Table 6.1 be utilised in the EIS. This will enable comparisons with estimates derived for other time periods and geographies.
14. It is recommended that SOC classifications be utilised in the EIS. This will enable comparisons with estimates derived for other time periods and geographies.
15. It is recommended that best use is made of existing data, both in the public domain and held by partner organisations, to enable estimates of the visitor activity attributable to the A&CI. The alternative, involving primary research with visitors, is likely to prove prohibitively expensive.

16.	It is recommended that the EIS implements a primary survey of local authority and other public organisations to assess the scale of relevant A&CI activity.
17.	The EIS will experience difficulties accessing all of the data needed to examine the impact of education institutions, particularly in the further education sector. A primary survey of institutions would help circumvent these data gaps.

1. Introduction

1.1 Background

EKOS Limited was commissioned by Creative Scotland to conduct a scoping study to examine possible approaches and methods for establishing a robust assessment of the economic impact of the arts and creative industries (A&CI) in Scotland. It is intended that the scoping study will inform a second stage of work (a full economic impact study (EIS)) by making recommendations about how such a study should be approached.

The study had **four principal aims**, *viz*:

- to recommend an approach and define what is and what is not achievable through an EIS of Scotland's A&CI ;
- to discuss and to recommend whether or not the wider social impacts should also be part of the full study, or be explored at some other time in the future;
- to recommend a model and approach for gathering information on the impact of Scotland's A&CI that can be easily replicated by partners, organisations, collectives and individuals on a longitudinal basis; and
- to explore whether the second stage of the work (the EIS) could be usefully undertaken in partnership with others at the UK, Scottish and local levels and, if so, to recommend the best approaches that should be adopted.

The study objectives were to:

- engage with a range of stakeholders regarding economic impact methodologies and the development of a partnership approach to implementing the EIS;
- conduct a review and evaluation of relevant existing and ongoing impact studies;
- appraise relevant measurement methods and make recommendations on the most appropriate methods and approach for use in the next phase of the work;
- scope the extent and quality of the data which already exist that would inform the second stage of the work and determine what, if any, additional primary data collection would be required;

- define the scope, scale and timescales that stage two would require; and
- recommend a number of case studies to provide more in-depth analysis in the second stage.

At the study inception, it was requested that the study makes comment on a number of subsidiary considerations, such as the:

- feasibility of including economic impact estimates disaggregated by geographical area; and
- potential to use estimates to benchmark performance against other economies.

It was also agreed at this meeting that while the question of the wider social impacts of the A&CI remains an issue of interest to Creative Scotland, this would be best addressed through separate work, which would probably focus primarily on the influence at a project or thematic level. Given this, this report makes no further comment on the techniques and data required to enable social impact assessment.

1.2 Scope

This report presents the conclusions and recommendations of the study and is structured around the key study objectives and subsidiary issues as follows:

- Chapter 2 outlines the context for the study and the key issues to be considered;
- Chapter 3 considers the definition of the A&CI;
- Chapter 4 outlines some key components of an EIS;
- Chapter 5 outlines a proposed analytical framework to guide the EIS;
- Chapter 6 examines in more detail the data availability and other technical issues which the EIS will have to take into account; and
- Chapter 7 summarises the main conclusions and recommendations.

Appendix A contains a brief summary of the economic impact literature, **Appendix B** discusses data availability in more detail and **Appendix C** lists partners consulted as part of the study.

2. Context

2.1 Introduction

Creative Scotland has a remit to work across the arts, culture, film, TV and the creative industries. Although formed through the merger of the Scottish Arts Council and Scottish Screen, the organisation is seeking to develop a new cultural agency model. It is important to Creative Scotland to understand the contribution made to the Scottish economy across the full breadth of the A&CI.

In seeking to develop suitable policies and activities that will enhance the economic contribution of the A&CI, it is essential that Creative Scotland has access to robust information about the scale and nature of that economic contribution.

2.2 Scope

The brief is for an EIS, and it is important to be clear from the outset about the scope and terms of the assignment.

Measuring the economic impact of the A&CI is a complex field that extends from relatively straightforward approaches to measuring economic activity in the A&CI (such as jobs, gross value added, etc.) to more complex means of assessing their economic and social value.

There is a substantial and wide-ranging literature relating to the economic impacts of the A&CI (see Appendix A). This literature divides into two broad areas:

- studies that have aimed to measure economic *impacts* in the A&CI; and
- studies that have sought to determine the economic *value* or worth of the sector or its component parts.

Economic impact studies

Broadly speaking, there are two kinds of economic impact studies popular in the A&CI:

- those that seek to measure the **economic effects of a particular activity** or set of activities e.g. a festival; and
- those that seek to quantify the **economic scale of the sector** e.g. in terms of economic indicators such as employment or gross value added (GVA).

The first of these methods typically makes use of primary research to gather income and expenditure data from providers and users to inform an assessment of the **net economic benefits** arising from the activity and the **return on investment** achieved.

Although useful in helping to make the case for future investment, these studies are of limited value in demonstrating the **overall** impact of the A&CI due to their focus on specific events, organisations or programmes. As such, they offer only a partial view of the economic impact of the sector.

The second approach offers more potential for the current study, and here again different methods have been used. Most of the work to date on the economic impact of the A&CI, both in Scotland and elsewhere, has typically taken one or more of the following approaches:

- 'baseline' analyses of economic indicators based on **existing secondary data** drawn from national data sets (this is the approach taken, for example, by the Department of Culture, Media and Sport (DCMS) in producing regular analyses of the creative industries at UK level and by Scottish Enterprise);
- basic assessment of economic scale (e.g. employment, number of businesses/organisations, etc) based on **primary research** work; and
- more detailed **assessment of economic impacts** based on primary research to establish **direct impacts** (those within the sector) and **indirect** and **induced impacts** (those arising through supplier linkages and income multiplier effects).

Each of these approaches has benefits and limitations. For example, analysis using secondary data has advantages in relation to ease of replication, the availability of

time series data[1] (thereby allowing analysis of change over time) and comparatively low costs. However, this kind of work is limited by the ways in which official economic data are classified into industry groups and sectors (see Chapters 3 and 5 and Appendix 2 for a more detailed discussion). This is a particular issue for the A&CI, as the Standard Industrial Classification (SIC) used for official economic data does not allow clear identification of specific activities within the sector, for example design and computer games development. It also provides only broad coverage of the arts. Although the 2007 revision of the SIC did improve some of these issues, it remains an imperfect solution for the A&CI.

There are also issues with the availability and reliability of detailed data, which become more apparent for smaller geographic areas. Further, with the coverage of self-employment and below VAT threshold businesses, this is a factor that is particularly relevant to the A&CI. Nevertheless, as a relatively low cost approach, secondary data studies can provide valuable insight on scale and trends, and afford comparisons with other parts of the economy or with the creative sectors in other UK administrative regions/other countries.

Methods based on primary research tend to be more expensive, but do permit the collection of more detailed and bespoke data, for example on income and expenditure within organisations, which can inform more sophisticated assessments of economic impact and multiplier effects. On the other hand, there are challenges in designing primary research methods capable of collecting the necessary data and in identifying and defining suitable samples for survey work. Grossing up from sample data to draw wider conclusions about the sector as a whole is also challenging, and it is difficult to replicate these analyses over time in a way that provides truly comparable datasets, particularly within reasonable resource limits.

Valuation studies

Despite their widespread use, there is evidence of considerable disquiet[2], particularly within the arts community, of attempts to measure the impact of the A&CI in economic and even social terms. This is often seen as 'instrumentalism' seeking to reduce the value of the arts to extrinsic impacts such as the number of people employed or the skills learned by those participating in cultural activity. At root, this disquiet is driven by a feeling that the arts are being judged by policy makers against

[1] Assuming data sources are consistent over time.
[2] See, for example, an essay by Adrian Ellis on *Valuing Culture* produced for DEMOS, 2009

criteria that fail to acknowledge or measure their *intrinsic* cultural value. Indeed, this view is typically accompanied by a belief that the cultural value is inherently resistant to measurement.

The growing field of **cultural economics** is, at least in part, a response to these issues, and has actively pursued the use of often sophisticated economic techniques to assess the **value** of culture. In particular, cultural economists have pioneered the use of hypothetical market models such as **contingent valuation** (CV) as a way of quantifying the economic value placed on culture.

There is a multitude of approaches within the broad term of CV methods, but these share some advantages. Most obviously, CV provides a way of capturing the external effects of the A&CI that are not captured (and valued) by the market. For example, through well-designed surveys, CV studies can assess the extent to which users and non-users of the arts are willing to pay for the existence of the arts over and above paying for specific activities (e.g. attending a festival).

As a method, CV has been subject to considerable scrutiny by the economic research community and, as a result, has become more robust and accepted. Although initially used to assess non-market value in areas, such as environmental benefit/damage, cultural economists have made an increasingly persuasive case for its use in the arts. However, CV can be expensive to implement requiring specific technical expertise in research design and analysis. It also does not provide a measure of the economic impact of the arts, but rather of the value placed on it by various stakeholders, most often the public.

More importantly for the current study, CV methods are not a way of assessing economic impact. They are essentially techniques to answer different, often highly specific, questions. In particular, they are typically used to assess the cost effectiveness (rather than the impacts) of different policies, activities or programmes. These issues are dealt with in more detail later in the report.

2.3 Partner Views

In the course of the study we consulted with a range of partners and wider stakeholders with an interest in the A&CI in Scotland (see Appendix C for a list). There were two essential objectives to these consultations:

- to seek input on issues relating to the methods that might be employed in the impacts study; and
- to gauge partners' interest in a collaborative approach to the work.

In relation to the first, very few of the consultees had any fixed views on the kinds of methods that should be used. Those that did all pointed to the benefits of using existing economic data sources, albeit recognising that there are well known limitations with measuring the A&CI using official economic data. In particular, issues with the fit between sector definitions and the SIC system that is used for official economic data were raised.

Those with a view on different methods were asked specifically about the need to move beyond direct effects to examine indirect and induced effects and about the use of CV techniques.

There was general agreement that indirect and induced effects should be included, but that again this would most realistically be achieved through the use of existing data sources (i.e. input-output tables) rather than expensive primary research.

Similarly, while there was interest in CV techniques, it was also recognised that these typically serve a different purpose. In particular, CV methods were considered useful in examining the cost effectiveness of specific policies (e.g. to invest in museums as opposed to another area) or in attempting to establish the return on investment from cultural policies in a way that could offer comparison with other policy areas. It was also recognised that CV was largely an issue for the cultural sector as opposed to the commercial creative industries (where value can be measured via market prices).

Therefore, the limited feedback that was received on methodological approaches tended to favour:

- an approach based as far as possible on existing secondary datasets; and

- a method that includes indirect and induced effects to provide a fuller assessment of the economic impacts of the A&CI.

There was broad agreement that a consistent approach to measuring the economic impact of the A&CI would be useful, and many recognised the diversity of methods that have been applied to date. Consultees were also asked about their interest in a partnership approach to the EIS. At the time of our discussions, none were in a position to make any formal commitment of resources to the study, but all expressed an interest in further discussions once a method had been developed and agreed. This is discussed further in the final chapter.

2.4 Requirements

Creative Scotland's requirements are for a study that can:

- assess the economic impact of the A&CI;
- provide a basis for measuring change over time;
- allow for 'drilling down' to specific geographies or sub-sectors; and
- provide robust and defensible data on which to base policy decisions.

With these requirements in mind, it is clear that the focus of the study should be on economic impact at the sector level, rather than programme or project level.

As such, the outputs of the impact study will not provide a means of assessing the economic impact of a specific event or project, nor will they provide an estimate of the value placed on the A&CI by the public (or indeed any other stakeholder group). Instead, the study will provide a detailed assessment of the economic impact of the A&CI and related activity.

The issues that now need to be addressed are:

- how to define the A&CI;
- how to specify the ways in which the A&CI create economic impact;
- how to define an analytical framework for the impact study; and
- the kinds of data that will be required by the study.

These issues are the focus of the chapters that follow.

3. Defining the Arts and Creative Industries

3.1 Introduction

In seeking to develop a conceptual and analytical framework for the measurement of the economic contribution of the A&CI, it is necessary to first clarify a workable definition of what activities this comprises. Defining the A&CI can be considered along two dimensions:

- sector-based definition of the cluster; and
- supply chain analyses.

3.2 Sub-sector definition

In its first attempt to define and measure the A&CI at the UK level, the DCMS defined the "creative industries" as:

> ***'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 intellectual property.***[3]

In seeking to measure the economic scale of the A&CI, the DCMS currently defines it to comprise the following 13 industry sub-sectors:

1. advertising
2. architecture
3. art and antiques
4. crafts
5. design
6. designer fashion
7. video, film and photography
8. digital and entertainment media
9. music
10. visual and performing arts
11. publishing
12. software and electronic publishing
13. television and radio

This is a broad and inclusive definition that is used by DCMS as a framework for the collection, analysis and reporting of economic data on the A&CI at the UK level, although some sub-sectors overlap in places.

[3] *Creative Industries Mapping Document*, Department of Culture Media and Sport, 1998.

Each sub-sector within the definition is made up of SIC codes.

The Scottish Government adopts a sector based definition that is close to that used by DCMS, as follows:

1. advertising
2. architecture
3. art and antiques trade
4. crafts
5. computer games, software, electronic publishing
6. design
7. designer fashion
8. music and the visual and performing arts
9. publishing
10. radio and TV
11. video, film, music and photography

These definitions are not perfect and the limitations and issues associated with them must be understood and appreciated. For example, the "software" category remains problematic in that it is a broad category with some elements of it not necessarily considered "creative". Yet this is a sub-sector that represents considerable and consistent growth in recent years and therefore, strongly influences the overall performance of the A&CI. However, with the introduction of the 2007 SICs, this allows for a more detailed breakdown of the sub-sector (four as opposed to three categories) and therefore, it will be easier to pinpoint areas of scale and growth.

Creative Scotland aims to be:

> ***"the new national leader for Scotland's arts, screen and creative industries. It's our job to help Scotland's creativity shine at home and abroad".***

The organisation works in partnership with a broad range of stakeholders, reflecting the breadth of its arts and creative industries remit. These include, for example, the Convention of Scottish Local Authorities (COSLA), Scottish Enterprise, Highlands and Islands Enterprise, Visit Scotland, Event Scotland, Museums and Galleries Scotland and the Scottish Creative Industries Partnership (SCIP).

Any definition adopted by Creative Scotland must reflect this broad approach adopted by the DCMS and the Scottish Government.

Indeed, Creative Scotland's remit is actually broader given the focus on the **arts** sector which extends beyond the commercial creative industries. It extends to six

key art forms: crafts; dance; drama; literature music; and visual arts. The above definition will include much of this activity particularly within the sub-sectors of *arts and antiques, crafts, music, and visual and performing arts,* as well as literature activity under *publishing.*

However, what it does not cover is the wider **cultural arts activity** that is captured through museums, and this is important, particularly for demonstrating the full economic contribution of visual arts. Although there some debate about the extent of museums and galleries activity that relates to the arts and creative industries, it is important that they are included. We return to this issue in Section 6.2.2.

While there are advantages in developing a single consistent definition, in practice this will always be a challenging goal. Different organisations must collect and analyse statistics in a way that provides them with the most useful and robust evidence on which to base policies and activities (i.e. the requirement to add museums to the definition in this study). What is more important is that the differences between the various definitions are properly understood.

Recommendation 1

The EIS should adopt the DCMS definition of A&CI as this will enable comparisons of the results of an EIS for Scotland with other UK-level studies (either as a whole or for some of its constituent nations and regions).

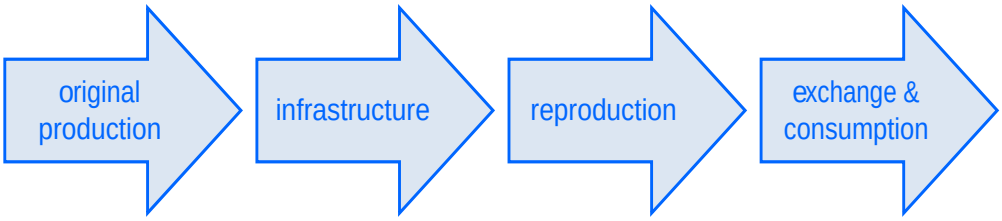
3.3 Supply Chain Analysis

In attempting to understand and measure the structure of the A&CI *cluster*, it is important to consider the way in which different activities within the sector groupings interact, and identify areas of relative strength or weakness.

One popular approach to this has been to make use of the **Creative Industries Production System (CIPS)**[4]. The CIPS is a framework for mapping SIC codes within the production process for the A&CI, as shown in **Figure 3.1**.

[4] Pratt, A. (1997) ' The cultural industries production system: a case study of employment change in Britain, 1984-91 ' Environment and Planning Vol. A:29, 11.

Figure 3.1: Creative Industries Production System (CIPS)



This model traces the influence of the A&CI within four distinct phases of the value production process:

- **Group 1: Original Production** – this contains activities relating to the development of creative content, including artistic and literary creation, film and television production, software (games) development and design activities;
- **Group 2: Infrastructure** – this group comprises the manufacturing inputs to the CIPS such as the manufacture of unrecorded media, TV and radio transmitters and receivers, photographic chemical media, etc;
- **Group 3: Reproduction** – this group contains those activities aimed at reproducing and distributing creative products, including the reproduction of sound and video recording, film distribution, etc; and
- **Group 4: Exchange and Consumption** – this group includes end-user access to creative content e.g. retailing of music CDs, books and games, cinema exhibition.

The main benefit of the CIPS model is that the SIC based definition can be overlaid onto sectoral groupings to examine the relative concentrations of activity at each stage of the production process.

However, there are two issues with the model:

- many A&CI companies and activities do not always fit neatly into CIPS (and indeed other supply chain models). For example, while the BBC is involved in Original Production and Reproduction, it is arguably also located in the Exchange and Consumption category; and
- SIC codes are not sufficiently detailed to allow a full analysis across the CIPS groupings.

Nevertheless, this approach has been applied before in Scotland and there may be merit in combining this definition with that of the DCMS[5].

Other approaches have been explored. For instance *Staying Ahead* as set by the Work Foundation[6] builds on the notion of "expressive value" highlighting "the connections, similarities and points of differentiation between the 'core creative fields', the 'cultural industries' and the 'creative industries'…it sets them within the wider economic context, as manufacturing and service sectors 'benefit from and exploit the expressive outputs generated by the creative industries"[7]. It refers to four categories: core creative fields, cultural industries, creative and cultural activities, and the rest of the economy.

However, while this is a useful way of thinking about the wider A&CI sector, from a practical perspective it does not allocate specific SIC codes to each of these four categories (like the CIPS does), which makes measuring based on the SICs impossible.

Recommendation 2

A future EIS could also apply the CIPS approach to present more detail on the nature of the A&CI in Scotland, and to enable comparisons to previous studies that have applied this approach to Scotland, and some of its sub regions.

[5] EKOS, *Digital Media and Creative Industries Baseline Study for Scotland*, for Scottish Enterprise (July 2005). This study used the CIPS to compare performance in Scotland with Scottish Cities (Aberdeen, Dundee, Edinburgh and Glasgow) and the UK. It was also applied in subsequent EKOS studies including the *Baseline of the Creative Industries Supply Chain in the Highlands and Islands,* completed for HIE in February 2009.
[6] Reid, B, A. Albert and L. Hopkins (December 2010), *A Creative Block? The Future of the UK Creative Industries*, A report for the Work Foundation.
[7] *Ibid,* page 12.

4. Economic Impacts

4.1 Introduction

Economic impact analysis is a generic term for a range of approaches used to measure the effects of a sector, activity, policy, project or programme on the economy of a specific geographic area. Related to this is the notion of an *economic baseline* which specifies the economic activity of a given sector or market in any given geographic area, at a specific point in time. This Chapter provides more detail on some of the basic concepts that would be employed in an EIS and covers:

- impact indicators;
- impact components;
- visitor effects; and
- deriving gross and net impacts.

4.2 Impact Indicators

Economic impact is assessed in terms of indicators which capture the nature of the contribution of an activity or groups of activities. The two most commonly used indicators are:

- **Gross Value Added (GVA).** In simple terms, GVA is the value of goods and services associated with the activities of an individual "producer" or combination of producers (grouped by geographical area or industrial sector), minus the value of the raw materials and other inputs used to produce them. Stated in monetary values, it can be measured via the:
    - **production approach** - the value of goods and services produced, minus the costs of (non-labour) inputs to the production process
    - **income approach** – the returns to the factors of production employed in the production of goods and services, primarily wages and profits
    - **expenditure approach** – the expenditure on finished or final goods and services produced[8]; and

[8] See http://www.statistics.gov.uk/cci/nugget.asp?id=254 This site also explains the relationship between GVA and other national accounts measures such as GDP, as well as how estimates are derived.

- **employment**. This is the number of people in paid jobs in relevant activities, where distinctions can be made between full and part time, and permanent and temporary workers. Normal practice is to express impacts in terms of full time annual equivalent jobs by adopting a transparent definition of what this is and applying appropriate aggregation procedures.[9]

There is a plethora of other economic indicators which can be applied, most of which are simply derivatives of the above, such as sub-sectoral or gender breakdowns of GVA and employment, the components of GVA such as gross output or income from employment, productivity measures like GVA per employee[10], or the export component of gross output, etc.

Recommendation 3

The minimum scope of any EIS should be to examine the GVA and employment associated with the A&CI. While it will be possible to provide at least a partial analysis of other indicators of interest, GVA and employment should be the minimum scope of any Scottish level assessment.
This approach will provide the means of comparing the A&CI contribution against that of other sectors in terms of the two most commonly applied indicators. It will also provide the basis for replicating the study to examine time trends[11].

4.3 Impact Components

In common with other activities, the economic contribution of the A&CI sector will comprise three main components[12]:

- **direct effects**: this is the GVA and employment generated by those organisations active in the supply of arts and creative goods and services. Hence, for example, direct employment will include the jobs provided to designers and programmers in a games business, along with those provided

[9] For example, a full time job might be defined as one requiring a minimum input of 30 hours per week.
[10] This is a very important measure, and one that attracts significant attention (especially given the agenda to pursue high value added jobs). It is important to ensure that the data used (GVA and number of employees) comes from the same consistent source (i.e. employment figures are those at determined by ABI2/ABS and not ABI1/BRES).
[11] Trend data could go back to 2003. Going back further would incur problems with consistency in data over time. Indeed, even going back to 2003 presents challenges in changes in datasets and SIC codes, but these are not insurmountable.
[12] Here we ignore the so called "super multiplier" effects, which relate to longer term and/or wider impacts such as effects on migratory flows, impacts on service provision, etc.

for staff in other occupations such as management, production, marketing, etc;

- **indirect** or **supplier linkage effects**: this comprises the GVA and employment generated elsewhere in the economy as a consequence of the purchases of inputs needed to produce A&CI goods and services. Some component of this might be GVA and jobs in other arts and creative organisations while the remainder would be from other sectors of the economy. An example might be the GVA and jobs generated by a company involved in the supply of catering services to the production company involved in a location shoot; and
- **induced** or **income multiplier effects**: this comprises the GVA and jobs generated as a consequence of the purchases of those employed through direct or indirect effects.

It is noticeable that many (if not most) studies which seek to scale the economic contribution of the A&CI have tended to focus only on the direct component[13] although there are some notable exceptions[14]. These studies will, therefore, provide only a partial assessment of the overall scale of the economic impact of the A&CI and will tend to understate their true importance.

Recommendation 4

Any future EIS should seek to go beyond the basic analysis of direct effects that has been the feature of many past studies of the sector at the sub-Scottish, Scottish and UK levels. This is to provide a fuller assessment of the A&CI contribution to economic activity. Chapter 5 provides an analytical framework which extends the analysis in an appropriate manner.

4.4 Visitor Effects

Parts of the A&CI sector constitute an important element in Scotland's visitor offering and any EIS should take into account the visitor related impacts. However, in order to excise double counting, it will sometimes be important to distinguish between 'on-site' and 'off-site' impacts. This treatment is analogous to impact assessment of

[13] See for example '*Creative Industries Economic Estimates (Experimental Statistics) Full Statistical Release*' DCMS, December 2010
[14] See for example, '*Valuing Culture: Measuring and Understanding Canada's Creative Economy*', The Conference Board of Canada, August 2008.

tourism and other activity which attract visitors to a specific event, facility, etc., where:

- **on-site** impacts are those generated by visitor expenditure made at the "venue" where an activity is hosted. For example, tickets purchased to view a performance or exhibition will help to support direct, indirect and induced jobs associated with the performing organisation, and/or with the venue itself; and
- **off-site** impacts are those associated with visitor expenditure made elsewhere during the visit to the theatre or gallery. For example, visitors to a performance might purchase accommodation, food, transport and other services elsewhere in the economy of interest, to enable their visit to a performance venue.

Recommendation 5

The EIS needs to take into account the economic activity generated by visitor activity induced by the A&CI. Chapter 5 provides more detail.

4.5 Deriving Gross and Net Impacts

4.5.1 Gross Impacts

The orthodox approach to deriving *gross impacts* first requires that the gross direct effects are established through use of either:

- secondary data sources. For example, direct employment estimates are available from the Annual Business Inquiry (see Chapter 5); or
- primary survey work. For example, visitor surveys are commonly employed to provide estimates of visitor behaviour, covering issues such as the purpose and length of visit, and expenditure made during the visit.

Once estimates of direct effects are established, these then are used in conjunction with appropriate *multipliers* to derive estimates of indirect and induced effects. Multipliers are normally taken from secondary data sources, such as Scottish Input-

Output Tables which provides survey evidence-based multiplier values for the different sectors used in compiling these tables. These multipliers show the scale of indirect and/or induced effect for every unit of direct effect. Hence, for example, given an observed value for direct jobs, E, in sector *i*, then the indirect employment effect, EI_i , for example, can be estimated as:

$$EI_i = m_i E_i$$

Where m_i is the indirect multiplier for sector i. Scottish Input-Output Tables provide sectoral multiplier values for indirect and induced effects, for indicators such as employment, GVA and output.

There are also separate tourism multipliers which enable the conversion of estimates of visitor expenditure to estimates of direct, indirect and induced employment and GVA effects[15].

4.5.2 Net Impacts

It is also important to recognise the distinction between studies that seek to examine the:

- overall scale of the economic contribution made by the A&CI or by specific sub-sector(s); and
- impact of a development project or programme undertaken to improve some aspect of the economic performance of the sector, normally funded by the public sector.

In the case of the latter, the assessment would examine the extent of both gross and net impacts generated by the project or programme, where gross impacts are adjusted to net impact by allowing for various additionality factors. Examples of additionality factors and their possible scale can be found in guidance published by the Department of Business Innovation and Skills (BIS)[16]. Average levels of additionality (when accounting for deadweight, displacement, substation effects and multiplier effects) depends very much on the project or programme in question (e.g.

[15] As commented in Sections 6.1 and 7.3, and in Recommendation 17, below, the Scottish tourism multipliers currently available are based on primary research which is nearly 20 years old. The costs of updating these would be prohibitively expensive and time consuming and it is not recommended that Creative Scotland considers commissioning such research.
[16] Research to Improve the Assessment of Additionality – BIS Occasional Paper No. 1, Oct 2009.

business development support, cluster support, skills development, etc). However, the conversion to net impacts is not an issue where seeking to scale the contribution of the A&CI as a whole.

Recommendation 6

The EIS needs to focus on gross impacts, and does not need to examine additionality factors applied to convert gross to net impacts.

5. Analytical Framework

5.1 Introduction

This Chapter provides an analytical framework to inform both the:

- scope of the EIS; and
- detailed choice of methods and tools to be applied.

There is, however, a danger that any framework can quickly become overly complicated, given the broad nature of activities under investigation, the myriad routes to generating impact and the complicated interactions between different components of the value chain. In order to keep things simple, we focus on identifying the essential elements of any EIS. The rest of this Chapter covers:

- organisational components;
- marketed and non-marketed goods and services;
- marketed goods and services;
- generating impact via visitor activity; and
- public sector activity.

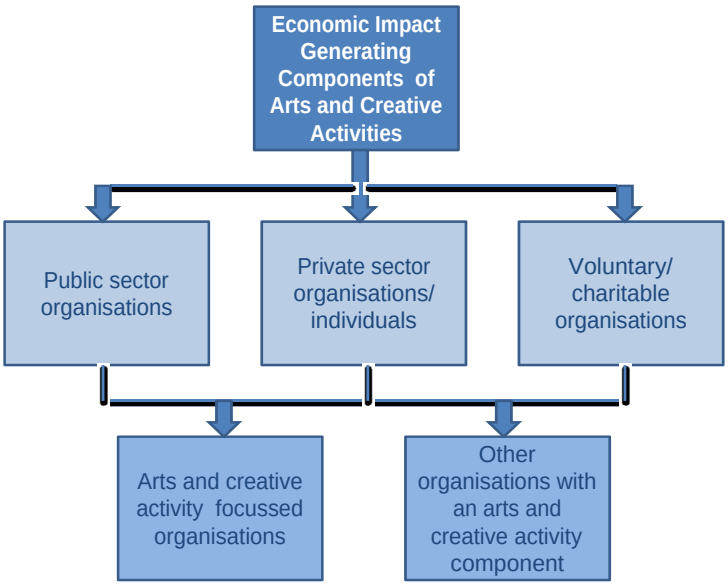
5.2 Organisational Components

There is an important distinction to be made regarding the types of organisations that are involved and whose influence any EIS should seek to capture. This is illustrated in **Figure 5.1**, over the page. Here, a distinction is made between:

- private sector organisations (or individuals, given the importance of self-employment for many of the A&CI) that supply goods and services to final consumers, or to other parts of the arts and creative sector as part of the value chain;
- public sector organisations (including local authorities, government agencies as well as central government) which supply goods and services to final consumers, which have a remit to develop the sector or sub-sectors, or which supply services to other organisations in the sector; and
- voluntary and charitable organisations involved in the direct or indirect supply of goods and services to final consumers. To the extent that

organisations in this sector are supplying marketed goods and services to intermediate and final consumers, then their impacts can be treated in an equivalent manner to other organisational types. It is a moot point, however, as to how to treat voluntary activity, and the extent to which this is generating economic impact. To the extent that volunteers are involved in supplying marketed goods and services then again this will be captured as for other organisation types. This will ensure that the economic effects of voluntary activity are captured, but not those activities that do not contribute to marketed goods and services. Indeed, a more detailed study of the voluntary arts, while useful, would be more appropriately considered as part of an examination of the social impacts of the sector.

Figure 5.1: Organisational Components



Below this, there is another important distinction to be made between those organisations (or individuals) whose primary focus is on supplying goods and services, and those for which arts and creative activity is either a subsidiary activity or one undertaken to support the organisations main functions. A good example of the latter would be the design function of a manufacturing business.

Recommendation 7

Any EIS must recognise that:

- *some proportion of economic impact will not be directly observable through economic statistics gathered on the basis of the main product or service offering of organisations (the normal way in which many economic statistics are presented). This has been recognised by other studies and some attempt made to get around the issue[17];*
- *the public and voluntary/charitable sectors could be a major source of economic impact, especially in areas such as the provision of A&CI related education and training, as well as development services to A&CI organisations. Again, for many public sector organisations this will only be a part of a wider service portfolio and the A&CI component might need to be disentangled; and*
- *there is the issue of how to deal with "unpaid" work by volunteers. In some cases this has been the subject of separate studies, confirming that the scale of volunteering is sometimes substantial.[18]*

5.3 Marketed and Non-Marketed Goods and Services

The basic source of economic impacts of the activities of all private, public or voluntary sector organisations derives from their supply of goods and services to intermediate or final consumers. In an A&CI context, however, there is a distinction to be drawn between *marketed* goods and services in the sense that there is a conventional buyer-seller relationship for them, and *non-market* goods and services which are provided free of charge to intermediate and/or final consumers.

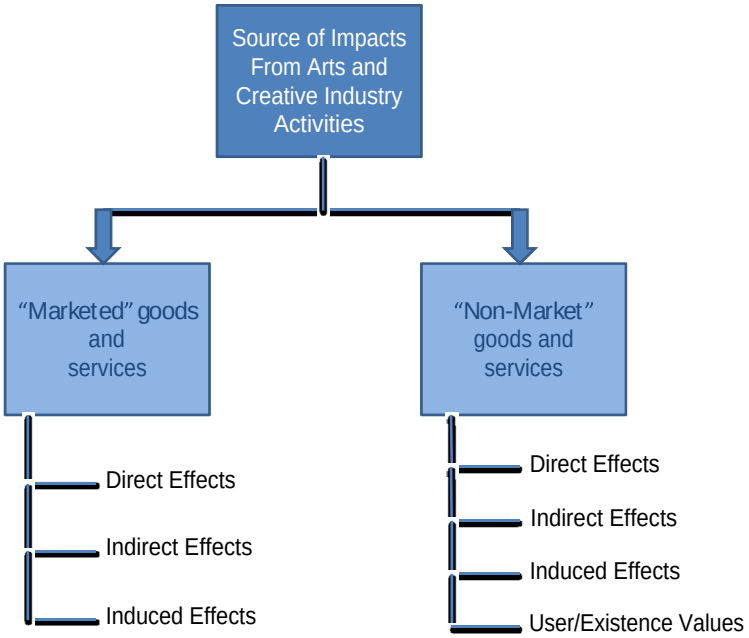
This distinction is illustrated in **Figure 5.2**, over. The important points to note about this are that:

- the economic impacts of A&CI activities which result in the production of marketed goods and services can be assessed in a manner analogous to that for any market based activity, and will have direct, indirect and induced components, as described in Chapter 4;

[17] For example, by using Labour Force Survey statistics to identify the numbers of employees and self employed doing creative jobs in other sectors
[18] See, for example 'Cultural Volunteering in the East Midlands', CFE, 2009

- even A&CI which supply goods and services which are not marketed will have similar direct, indirect and induced components. In this context, however, it is not the final consumer that pays for provision, but in all likelihood it is the public sector which subsidise provision; and
- while the value of marketed goods and services can be measured in terms of their exchange value, the same is not true of non marketed goods and services because there is no payment made for access/consumption. It should be borne in mind, however, that on one level assessing the values of these, using techniques such as CV, is important only in so far as there is an interest in the cost effectiveness of their provision. As mentioned above, the economic impact of their production can be measured using a similar approach to that for marketed goods and services.

Figure 5.2: Marketed and Non-Marketed Goods and Services



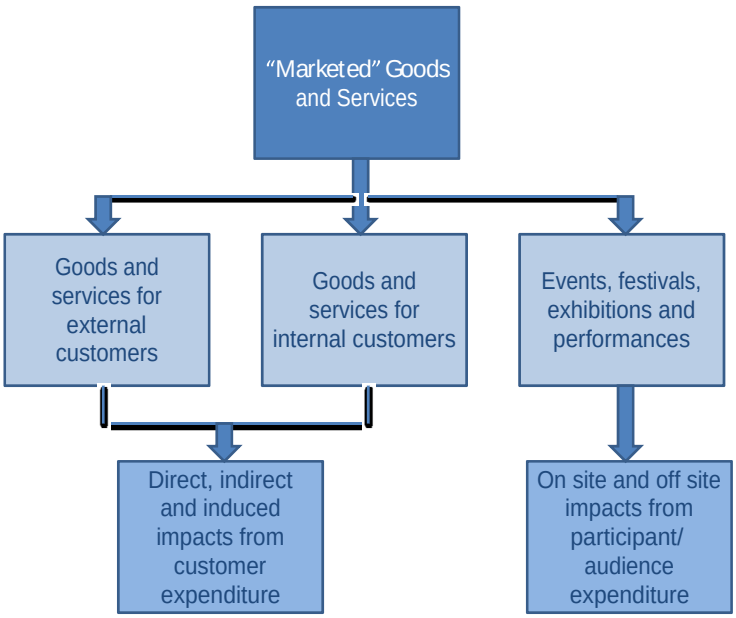
Recommendation 8

The EIS needs to focus on the impacts associated with the supply of all A&CI goods and services whether these are marketed or not. Valuation techniques are not required to assess the scale of activity associated with the latter, as this will be captured by examining supply-side indicators.

5.4 Marketed Goods and Services

The marketed goods and the A&CI activity will comprise three major categories, as illustrated in **Figure 5.3**.

Figure 5.3: Types of Marketed Goods and Services



The three main categories are:

- goods and services for external customers, be they final or intermediate consumers;
- goods and services for internal customers, which relate in the main to the arts and creative activities which are used to service the needs of other productive activity; and
- the provision of events, festivals, exhibitions and other performances which seek to attract audiences. While this may be thought of as a sub-category of the first one in this list, it is important to distinguish it because of the potential to generate off-site impacts.

As mentioned earlier, this distinction illustrates the need for any EIS to look beyond the effects attributable only to organisations which focus on the production of arts and creative goods and services for external customers. It also highlights again the need to take account of any off-site visitor effects which can be attributed to A&CI activities.

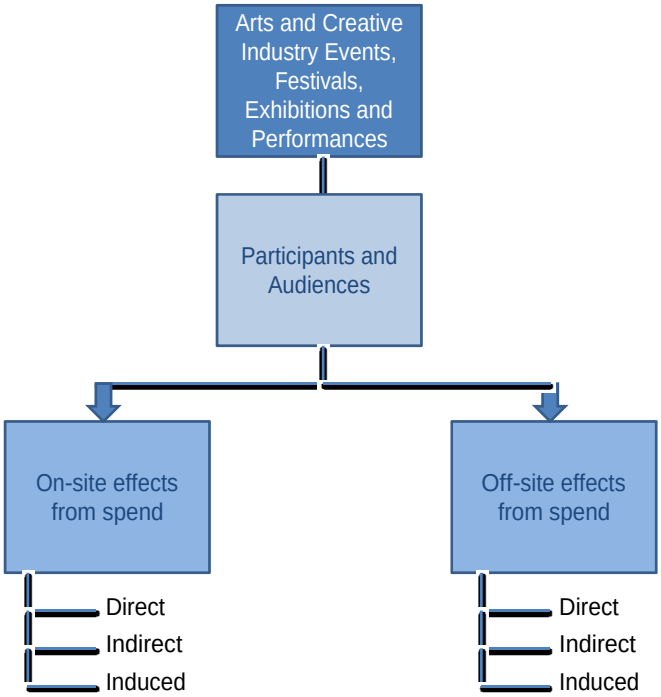
Recommendation 9

The EIS should include treatment of the economic activity associated with the supply of goods and services to internal customers.

5.5 Generating Impact from Visitor Activity

Some aspects of the A&CI will generate impacts analogous to those attributable to other tourism/service provision which generates visitor activity within an area. This is illustrated in **Figure 5.4**

Figure 5.4: Impacts from Events



As explained in Chapter 4, activities of this type will generate economic impact through the:

- expenditure of participants and audiences on-site at the venue at which the event takes place, such as on admissions and catering. This will have associated direct, indirect and induced effects; and
- expenditure of participants and audiences off-site, elsewhere in the area of the economy of interest, where again there will be a direct, indirect and induced effect from this expenditure.

While the impacts from on-site and off-site spend can be captured via visitor surveys and the use of appropriate multipliers for indirect and induced effects there are technical challenges which any study of Scotland wide impacts would need to take into account. They key ones apply when:

- aggregating across multiple events, performances, etc, where care is needed to avoid double counting trip expenditures. For example, visitors to the Edinburgh Festival might attend more than one performance, even on

the same day. This potential for double counting is especially problematic when seeking to aggregate to Scottish level impacts; and

- combining data on on-site impacts with those derived from other primary or secondary data sources. Again, care is needed to avoid double counting.

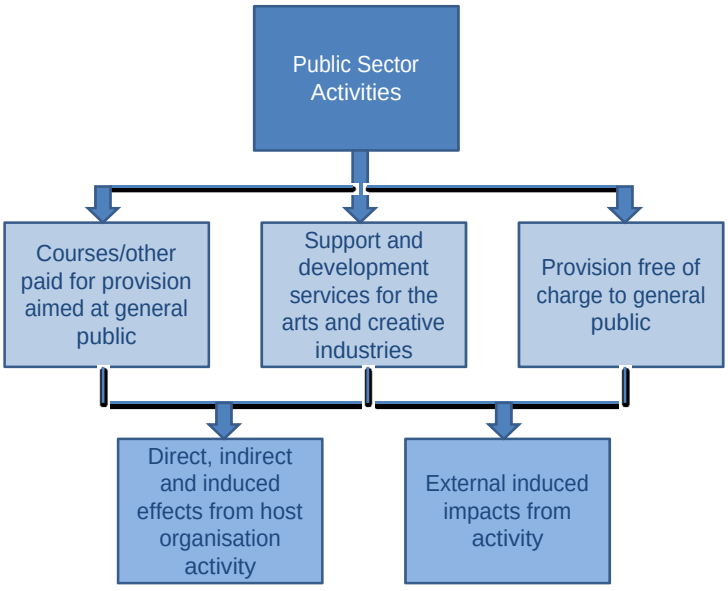
Recommendation 10

The EIS should include treatment of the off-site impacts associated with visitor expenditure generated by A&CI. Data availability will be an issue, and care will be needed to avoid double counting.

5.6 Public Sector Activity

Public sector organisations will contribute to the overall economic impact of the A&CI via various channels, as illustrated in **Figure 5.5.**

Figure 5.5: Economic Impact Channels of Public Sector Activities



While not necessarily exhaustive, this list illustrates the variety of ways in which the public sector might generate impacts.

The main points to note are that:

- the public sector contribution to the A&CI is a highly significant area, which tends to be undervalued because of the difficulty of access to reliable data. For instance, a study by Martin Smith (former chairman of the Young Vic Theatre Company), *Arts Funding in a Cooler Climate* in 2010 states that 53% of the income received by the arts sector in the UK comes from public funding[19];
- in most cases, the proportions of a public sector organisations' activities which are associated with A&CI will not be made explicit in secondary data sources such as the Business Register and Employment Survey (BRES), although it is possible sometimes to identify other sources which might help. For example, the Higher Education Statistics Agency (HESA) does provide information on employees by institution and subject area (although again there is not a direct correspondence between these categories and what might be included as A&CI). Likewise, there have been one-off surveys of local authority activity in the creative sector[20] while other studies have examined the routes whereby public sector bodies are supporting the A&CI[21];
- there will also be an impact associated with the attraction of students and other participants to A&CI education, training and Continuing Professional Development (CPD) provision, analogous to the impacts discussed above relating to events, etc.[22];
- free service provision can be treated in a similar way to general non-marketed goods and services; and
- the impact of support services, provided by organisations such as Creative Scotland, will have generative impact which extends beyond the normal indirect and induced effects associated with organisational expenditure on goods and services. This again raises issues of how to capture these

[19] Smith, M. (2010), *Arts Funding in a Cooler Climate*.
[20] See, for example, "*Culture and Leisure Services in Local Government*' EKOS, 2010.
[21] See for example, '*Creating Prosperity: the Role of Higher Education in Driving the UK's Creative Economy*', EKOS, 2010.
[22] There have been numerous studies of the economic impacts of higher and further education providers, although these have tended to focus on specific institutions rather than on aggregations at a sector or national level.

impacts other than via the aggregation of evaluation evidence from specific interventions.

Recommendation 11

The EIS should include examination of the A&CI activity generated by the public sector. It is, however, recognised, that secondary data constraints may mean that only a partial analysis will be possible for some aspects of this contribution, without extensive and expensive primary data generation. Care will again be needed to avoid double-counting.

5.7 Summary

To summarise, the proposed framework suggests that the EIS should seek to capture the extent of economic impact associated with A&CI activity across a range of contexts. This will include the contributions:

- from organisations that are suppliers of A&CI to final consumers;
- made by A&CI activities in other sectors not within the A&CI;
- associated with the visitor expenditure of those attracted by A&CI activity; and
- made by the public sector, including local authorities, sector support organisations and educational institutions.

Wherever possible and relevant, some attempt should be made to capture the direct, indirect and induced effects for key economic indicators.

6. Data

6.1 Introduction

This Chapter seeks to identify data sources which could be used to implement the analytical framework described in **Chapter 5**. It should be recognised, however, that there are data gaps, and that in some cases the data that are available are not fully up to date or do not fully match with the adopted definition of the A&CI.

Data gaps are a particular problem for specific aspects of the analytical framework such as the contribution made by the A&CI to generating visitor activity and the extent of activity within the public sector and other organisations (such as educational institutions) where A&CI is only one aspect of their wider remit and role. In addition, some data sources, such as generic industrial and tourism sector multipliers, either only provide a partial match to the A&CI or are felt by some practitioners to be too out of date[23].

This means that in implementing the EIS there will sometimes be a need to choose between commissioning primary data gathering and making best use of what is available. In some cases, such as the compilation of multipliers which reflect the specificities of all A&CI sub-sectors, or which update the tourism multipliers, the costs of commissioning an exercise that will produce valid and robust results is likely to be prohibitive[24]. Also, until such an exercise is undertaken it is not possible to assess the degree of errors in the current set of multipliers and hence the degree of improvement achieved in return for the investment.

The general conclusion is that, while the EIS might require to undertake some *ad hoc* data generation exercises (for example, surveying local authorities to gather updated information on the scale of their A&CI service provision), the proposed analytical framework for an EIS can largely be implemented making best use of available secondary data from official sources, complemented with the appropriate use of propriety data held by some organisations.

[23] The latter comment is particularly true of the tourism multipliers which are available. These were compiled in 1992 and while it is possible to make adjustments to reflect productivity and price movements over time, some concerns remain over the extent to which they are still an accurate reflection of the structure, and interrelationships between different aspects, of the tourism economy.
[24] Based on the costs of the exercise in 1992, and up-rating to today's prices, suggests that revisiting tourism multipliers alone could cost in excess of £250,000.

Recommendation 12

A future EIS should rely mainly on existing secondary data from official sources, and avoid overly expensive primary data generation exercises in areas such as compiling new tourism multipliers. While there will be some data gaps, and some instances where there is not an exact fit with what the analytical framework implies is required, there should only be a minimal need for ad hoc surveys targeted on specific issues and/or target groups.

The rest of this chapter covers: the relevant SICs; the relevant SOCs; Input-Output tables; indicators and official sources; and other sources.

6.2 The Relevant Standard Industrial Classifications (SICs)

6.2.1 Mapping the A&CI

The lack of reliable and robust economic data on the A&CI has been a persistent constraint, evident not only at Scottish and UK levels, but also internationally. The limitations of official datasets and industry classifications are well known, and are such that it is not possible to identify clearly the component sectors of the A&CI at national or regional levels. This creates obvious challenges for policy making.

In recognition of these limitations, a variety of different data mining approaches have been taken to measure the economic contribution of the A&CI, resulting in widely varying estimates on indicators such as employment, business stock, turnover and GVA. However, in doing so, the starting point for direct economic impact, has always been to define the sector based on SIC codes.

In developing a robust and transparent analytical framework for the measurement of the A&CI, it is essential that proper consideration is given to the **limitations of the available data**. There is, in the short term at least, little point in proposing detailed and complex definitions of the A&CI if no data are available to populate these definitions.

The limitations and issues surrounding the coverage provided by the SICs of the A&CI are well known and have been extensively described elsewhere. However, for the purposes of defining a method for the current study, some of these issues must now be considered.

The SIC is a hierarchical classification system within which the number of digits used to categorise an industry increases with the degree of sectoral disaggregation. Within the European Union, all Member States are required by law to ensure that their national industrial classification systems are identical to the European nomenclature (NACE) to the four-digit level. National systems also contain a five-digit level determined nationally and varying across Member States.

Essentially, the SIC system was designed for a manufacturing economy. It provides far less detailed coverage of service industries, and within this there are specific problems in identifying and measuring the A&CI. In particular, while some A&CI sub-sectors provide a strong match for SIC codes e.g. advertising, others are subsumed within much broader categories of activity that contain large proportions of non-A&CI activity, although some of the limitations have been addressed with the latest SIC codes – the 2007 SICs introduced in 2010.

In recognition of these difficulties, the DCMS developed a weighting system to estimate the proportion of activity within certain categories that could be attributed to the A&CI. While this might seem to be an attractive solution, there are two issues with this:

- first, it does not permit for analysis of change over time. If data record a change within a four digit SIC code (e.g. Architecture), and a proportion has been assumed to represent A&CI activity, it is impossible to determine whether or not the recorded change is attributable to that proportion or to the remainder of the activities within the category; and
- secondly, DCMS weightings were intended only for use at a national (UK) level as they are not considered to be sufficiently statistically robust for use at regional levels.

As a result, the inappropriateness of SIC codes is a persistent difficulty facing the analysis of the A&CI at the Scottish and sub-national levels.

It is worth noting that the A&CI data published by the Scottish Government made use of the DCMS weightings system. The rationale for this was simply that, despite the issues mentioned above, the weightings system was felt to provide the best estimate of the scale of the industries in Scotland (although these weightings are now being reviewed by the Scottish Government).

6.2.2 SIC 2007 Definition

Based on the 2007 SIC codes, the definition for A&CI is presented below in **Table 6.1**.

Table 6.1: A&CI SIC 2007 Definition

	SIC (2007)	Supply Chain
Advertising	• 7311: Advertising agencies • 7312: Media representation	• OP • OP
Architecture	• 7111: Architectural activities • 7410: Specialised design activities	• OP • OP
Arts & Antiques	• 47781: Retail sale in commercial art galleries • 47791: Retail sale of antiques including antique books, in stores	• E&C • E&C
Crafts	Majority of businesses too small to be picked up in business surveys (SOC become important)	
Design	• 7410: Specialised design activities (89.6%)	• OP
Designer Fashion	• 1411: Manufacture of leather clothes (0.5%) • 1412: Manufacture of workwear (0.5%) • 1413: Manufacture of other outerwear (0.5%) • 1414: Manufacture of underwear (0.5%) • 1419: Manufacture of other wearing apparel and accessories (0.5%) • 1420: Manufacture of articles of fur (0.5%) • 1431: Manufacture of knitted and crocheted hosiery (0.5%) • 1439: Manufacture of other knitted and crocheted apparel (0.5%) • 1512: Manufacture of luggage, handbags and the like, saddlery and harness (0.5%) • 1520: Manufacture of footwear (0.5%) • 7410: Specialised design activities (5.8%)	• Infra • Infra • Infra • Infra • Infra • Infra • Infra • Infra • Infra • Infra • OP
Digital & Entertainment Media	• 5821: Publishing of computer games • 62011: Ready-made interactive leisure and entertainment software development	• Repro • Repro

Music & Visual and Performing Arts	• 18201: Reproduction of sound recording (25%) • 5920: Sound recording and music publishing activities • 9001: Performing arts • 9002: Support activities to performing arts • 9003: Artistic creation • 9004: Operation of arts facilities • 78101: Motion picture, television and other theatrical casting (0.07%) • 91.02: Museum activities	• Repro • Repro • OP • Infra • OP • Infra • Infra • E&C
Publishing	• 5811: Book publishing • 5813: Publishing of newspapers • 5814: Publishing of journals and periodicals • 5819: Other publishing activities • 6391: News agency activities	• Repro • Repro • Repro • Repro • OP
Radio & TV	• 6010: Radio broadcasting • 6020: Television programming and broadcasting activities • 59113: Television programme production activities • 5912: Motion picture, video and television programme post-production activities (81.6%) • 59133: Television programme distribution activities	• Repro • OP • OP • Repro • E&C
Software and Electronic Publishing	• 18203: Reproduction of computer media (25%) • 5829: Other software publishing • 62012: Business and domestic software development • 6202: Computer consultancy activities	• Repro • Repro • OP • OP
Video, Film and Photography	• 18202: Reproduction of video recording (25%) • 7420: Photographic activities • 59111: Motion picture production activities • 59112: Video production activities • 5912: Motion picture, video & TV post production activities (18.4%) • 59131: Motion picture distribution activities • 59132: Video distribution activities • 5914: Motion picture projection activities	• Repro • OP • OP • OP • Repro • Repro • Repro • E&C

It is in line with the DCMS definition, except for one key difference – the inclusion of museum activities within the *visual and performing arts* sub-sector. As not all museum activity is directly related to the arts (e.g. some archiving work), perhaps a weighting allocation should be applied (as the DCMS has done for other SICs). What that weighting should be would be best determined via primary research to determine which museums are arts-related and the direct employment within those. MGS may already have access to these kinds of data.

The definition details the SICs within each sub-sector and it also then allocates each SIC to one of the four supply chain categories (see **Figure 3.1**).

The 2007 revisions have provided more detailed categorisation (e.g. for Software), however, a difficulty that remains is that many of the changes are felt at the five-digit level, and five-digit data are subject to confidentiality issues, particularly at sub-UK levels. The Office of National Statistics (ONS) is unable to provide any guidance on the availability of five-digit data without a specific data request.

In reviewing the issues surrounding the use of SIC codes to describe and measure the A&CI in Scotland, it is clear that any analysis will require a degree of compromise. However, although imperfect, the SIC remains the only robust UK wide system of industrial classification and must form the basis of any analytical framework for the A&CI.

Recommendation 13

While there are recognised issues that can impact on the accuracy of estimates, it is recommended that the SIC classification given in Table 6.1 be utilised in the EIS. This will enable comparisons with estimates derived for other time periods and geographies.

6.2.3 Data available using SICs

Data can be captured on the following indicators using the above SIC based definition of the A&CI:

Table 6.2: Data via SICs

Indicator	Source
Employment (within A&CI)	Annual Business Inquiry (ABI) Business Register and Employment Survey (BRES) Labour Force Survey (LFS)
Self-Employment (within A&CI)	Labour Force Survey (LFS)
Business Stock (within A&CI)	Inter-Departmental Business Register (IDBR)
Turnover – actual (within A&CI)	Annual Business Survey (ABS)
Turnover – bands (within A&CI)	Inter-Departmental Business Register (IDBR)
Labour costs (within A&CI)	Annual Business Survey (ABS)
GVA (within A&CI)	Annual Business Survey (ABS) or employment based and using GVA/employee

6.2.4 Data release

While much of the data requirements of the EIS can be satisfied using secondary data, it should be borne in mind that these data are released annually, and can refer to data from up to two years earlier. Current availability is given in **Table 6.3**.

Given what is currently available and the timing of data releases, it would seem sensible for the EIS to focus on either:

- 2009 which could be accommodated immediately; or
- 2010 which would be feasible from early 2012.

Table 6.3: Data based on SICs

Indicator	Source	Years available	Next year and release date	SICs	SIC level (up to)
Employment	ABI	1998-2008	Discontinued	2003	5 digit
	BRES	2008-2009	2010 data (Dec 2011)	2007	5 digit
	LFS	1992-2011	Quarterly (Mar, Jun, Sep, Dec for nearest previous quarter)	2003 & 2007	4 digit
Self-Employment	LFS	1992-2011	Quarterly (Mar, Jun, Sep, Dec for nearest previous quarter)	2003 & 2007	4 digit
Business Stock	IDBR	1998-2010	2011 data in Sep/Oct 2011 (data at point in time of March of that year)	2003 & 2007	5 digit
Financial					
Turnover (bands)	IDBR	1998-2010	2011 data in Sep/Oct 2011 (data at point in time of March of that year)	2003 & 2007	5 digit
Turnover (actual)	ABI2 now ABS	1998-2009	2009 data in July 2011 (2010 data in July 2012)	2003 & 2007	5 digit
Labour costs	As above				
GVA	As above				

6.3 The Relevant Standard Occupational Classifications (SOCs)

6.3.1 A&CI Mapping

As above, data derived using SIC codes can be used to capture the direct effects for indicators such as employment, self-employment and GVA *within* creative organisations (i.e. those for which the main business is to supply A&CI goods and services), but will not capture:

- employees doing creative jobs in other industries; and
- self-employed people doing creative jobs in other industries.

One means of identifying this is via the use of Standard Occupational Classification (SOCs), which cover the occupations as opposed to the industry that individuals work in.

In an ideal world the SOCs would match the SICs, but this is not the case. Therefore, it will require mapping SICs with particular SOCs and then applying a proportion of those employed in creative occupations that are self-employed to the SICs. This is of course only a best fit. These have all been developed based on the 2000 SOC codes. 2010 SOC codes have recently been developed, but only to be used as part of the 2011 Census to date (data for which will not be released until 2014).

Such a best fit is identified below in **Table 6.4**. Our definition includes some SOCs that have not been adopted by DCMS. These are in blue font. Also highlighted in red font are those that cross between two sub-sectors. To avoid double-counting these will require to be allocated to one sub-sector or a proportion allocated to each of the sub-sectors. This has been done by the DCMS for *3422: Product, clothing and related designer professionals* which has been split between Design (93.9%) and Designer Fashion (6.1%). However, this has not been done for a number of other occupations which we believe straddle two different sub-sectors. These include:

- 3411: Artists (Design and Visual and Performing Arts);

- 3412: Authors, writers (Music, Visual and Performing Arts, and Publishing);
- 3421: Graphic designers (Design and Software and Electronic Publishing);
- 3432: Broadcasting associate professionals (Radio and TV and Video, Film and Photograph)y; and
- 5494: Musical instrument makers and tuners (Crafts and Music).

Table 6.4: A&CI 2000 SOC Definition

	SIC (2007)	SOC (2000)
Advertising	• 7311: Advertising agencies • 7312: Media representation	• 1134: Advertising & public relations managers • 3433: Public relations officers • 3543: marketing associate professionals
Architecture	• 7111: Architectural activities • 7410: Specialised design activities	• 2431: Architects • 2432: Town planners • 3121: Architectural technologists and Town planning technicians
Arts & Antiques	• 47781: Retail sale in commercial art galleries • 47791: Retail sale of antiques including antique books, in stores	No match - see visual and performing arts
Crafts	Majority of businesses too small to be picked up in business surveys (SOC become important)	• 5491: Glass and ceramics makers; decorators and finishers • 5492: Furniture makers; other craft woodworkers • 5493: Pattern makers (moulds) • 5494: Musical instrument makers and tuners • 5495: Goldsmiths, silversmiths, precious stone workers • 5496: Floral arrangers, florists • 5499: Hand craft occupations n.e.c. • 8112: Glass and ceramics process operatives • 9121: labourers in building and woodworking trades (5%)
Design	• 7410: Specialised design activities (89.6%)	• 2126: Design and development engineers • 3411: Artists • 3421: Graphic designers • 3422: Product, clothing and related designers (93.9%)

Designer Fashion	• 1411: Manufacture of leather clothes (0.5%) • 1412: Manufacture of workwear (0.5%) • 1413: Manufacture of other outerwear (0.5%) • 1414: Manufacture of underwear (0.5%) • 1419: Manufacture of other wearing apparel and accessories (0.5%) • 1420: Manufacture of articles of fur (0.5%) • 1431: Manufacture of knitted and crocheted hosiery (0.5%) • 1439: Manufacture of other knitted and crocheted apparel (0.5%) • 1512: Manufacture of luggage, handbags and the like, saddlery and harness (0.5%) • 1520: Manufacture of footwear (0.5%) • 7410: Specialised design activities (5.8%)	• 5411: Weavers and knitters • 5414: Tailors and dressmakers • 5419: Textiles; garments and related trades n.e.c. • 3422: Product, clothing and related designers (6.1%)
Digital & Entertainment Media	• 5821: Publishing of computer games • 62011: Ready-made interactive leisure and entertainment software development	No matches - see software
Music & Visual and Performing Arts	• 18201: Reproduction of sound recording (25%) • 5920: Sound recording and music publishing activities • 9001: Performing arts • 9002: Support activities to performing arts • 9003: Artistic creation • 9004: Operation of arts facilities • 78101: Motion picture, television and other theatrical casting (0.07%) • 9102: Museum activities	• 3411: Artists • 3412: Authors, writers • 3413: Actors, entertainers • 3414: Dancers and choreographers • 3415: Musicians • 3416: Arts officers, producers and directors • 5494: Musical instrument makers and tuners
Publishing	• 5811: Book publishing • 5813: Publishing of newspapers • 5814: Publishing of journals and periodicals • 5819: Other publishing activities • 6391: News agency activities	• 3412: Authors, writers • 3431: Journalists, newspaper and periodical editors • 5421: Originators, compositors and print preparers • 5422: Printers • 5423: Bookbinders and print finishers • 5424: Screen printers

Radio & TV	• 6010: Radio broadcasting • 6020: Television programming and broadcasting activities • 59113: Television programme production activities • 5912: Motion picture, video and television programme post-production activities (81.6%) • 59133: Television programme distribution activities	• 3432: Broadcasting associate professionals • 5244: TV, video and audio engineers
Software and Electronic Publishing	• 18203: Reproduction of computer media (25%) • 5829: Other software publishing • 62012: Business and domestic software development • 6202: Computer consultancy activities	• 213: Information & Communication Technology Professionals • 2132 Software professionals • 2131: IT strategy and planning professionals • 3421: Graphic designers
Video, Film and Photography	• 18202: Reproduction of video recording (25%) • 7420: Photographic activities • 59111: Motion picture production activities • 59112: Video production activities • 5912: Motion picture, video & TV post production activities (18.4%) • 59131: Motion picture distribution activities • 59132: Video distribution activities • 5914: Motion picture projection activities	• 3434: Photographers and audio-visual equipment operators • 3432: Broadcasting associate professionals
Other Arts/Cultural Activity	• 9102: Museum activities	No available SOCs

Recommendation 14

It is recommended that the SOC classification given in Table 6.4 be utilised in the EIS. This will enable comparisons with estimates derived for other time periods and geographies.

6.3.2 Data available using SOCs

The SOC definition can be used to capture data on the following:

- self-employment both within A&CI and in creative occupations beyond A&CI; and
- employment both within A&CI and in creative occupations beyond A&CI.

The data sources are either the Labour Force Survey (LFS) or the census with the information on release dates and latest data provided below. LFS data are released quarterly, and can be aggregated to coincide with whichever baseline year is adopted for the EIS.

Table 6.5: Data based on 2000 SOCs

Indicator	Source	Years available	Next year and release date
Employment and self employment (within A&CI) and (in creative occupations beyond A&CI)	LFS	1992-2011	Quarterly (Mar, Jun, Sep, Dec for nearest previous quarter)
	Census	2001	2011 Census (data due in 2014)

6.4 Input-Output Tables

SIC and SOC-based data on the employment and GVA generated by the A&CI only covers direct effects. Some method is needed to assess indirect and induced effects, particularly the appropriate multipliers that can be used. A key source will be Scottish Input-Output Tables which provide a complete picture of the flows of goods and services (products) in the economy for a given year. They detail the relationship between producers and consumers and the interdependencies of industries.

In particular, they provide estimates of indirect and induced multipliers which vary depending on the sector. There is, however, a complication in that there is no direct correspondence between the definition of sectors used in the compilation of Input Output Tables and the SICs of the A&CI.

In total there are 123 Input Output sectors, and only 14 of these can be considered to have some relevance to the sub-sectors of the A&CI, although in some cases the

match is tenuous. **Table 6.6** details those which can be considered to be part of the A&CI. **Table 6.7** details the SICs that comprise each of the industry groups.

It is important to note that these are national level multipliers. If the analysis is to be done at the sub-regional level in Scotland, these have to be adjusted accordingly. There is little data to inform such an adjustment, and standard practice is to apply between half and two thirds of the national value depending on the scale of sub-region being investigated.

Table 6.6: Type II Multipliers (Scotland, 2007)

	Industry Group	Output multiplier	Income multiplier	Employment multiplier	GVA multiplier
1	Textile weaving	1.84	1.64	1.86	1.99
2	Textile finishing	1.84	1.62	1.67	1.91
3	Other textiles	1.78	1.74	2.06	2.21
4	Knitted goods	1.65	1.55	1.39	1.78
5	Wearing apparel & fur products	1.64	1.52	1.67	1.74
6	Printing & publishing	1.69	1.57	1.71	1.71
7	Glass & glass products	1.76	1.58	1.70	1.84
8	Ceramic goods	1.70	1.53	1.67	1.81
9	Jewellery & related products	1.48	1.55	1.49	1.49
10	Computing services	1.68	1.47	1.64	1.61
11	Architectural activities etc	1.75	1.62	1.78	1.70
12	Advertising	1.61	1.50	1.55	1.51
13	Marketing research	1.68	1.58	1.63	1.66
14	Other business services	1.63	1.53	1.43	1.55
15	Recreational services	1.91	2.15	2.24	2.20

Table 6.7: Type II Multipliers (Scotland, 2007), relevant SICs

	Industry Group	SICs (2003)
1	Textile weaving	17.2: Textile weaving
2	Textile finishing	17.3: Textile finishing
3	Other textiles	17.52: Manufacture of cordage, rope, twine and netting 17.53: Manufacture of non-wovens and articles made from non-wovens, except apparel 17.54: Manufacture of other textiles n.e.c
4	Knitted goods	17.6: Manufacture of knitted and crocheted fabrics 17.7: Manufacture of knitted and crocheted articles
5	Wearing apparel & fur products	18: Wearing apparel & fur products
6	Printing & publishing	22: Printing & publishing
7	Glass & glass products	26.1: Glass & glass products
8	Ceramic goods	26.2 Manufacture of non-refractory ceramic goods other than for construction purposes; manufacture of refractory ceramic product 26.3: Manufacture of ceramic tiles and flags
9	Jewellery & related products	36.2: Manufacture of jewellery and related articles 36.3: Manufacture of musical instruments
10	Computing services	72: Computer and related activities
11	Architectural activities etc	74.2: Architectural and engineering activities and related technical consultancy 74.3: Technical testing and analysis
12	Advertising	74.4: Advertising
13	Market Research	74.13: Market research and public opinion polling 74.14: Business and management consultancy activities 74.15: Management activities of holding companies
14	Other business services	74.5: Labour recruitment and provision of personnel 74.6: Investigation and security activities 74.7: Industrial cleaning 74.8: Miscellaneous business activities n.e.c
15	Recreational services	92: Recreational, cultural and sporting activities

As the tables above show, there is a very loose fit between the available multipliers and the sub-sectors of the A&CI. Matching them to each sub-sector is given in **Table 6.8.** However, any use of these multipliers must come with such a caveat.

Table 6.8: Sub-sector and relevant multiplier (from above)

Sub-Sector	Multiplier
Advertising	12
Architecture	11
Arts & Antiques	15
Crafts	7, 8, 9
Design	13
Designer Fashion	1, 2, 3, 4, 5
Digital & Entertainment Media	10
Music & Visual and Performing Arts	6, 15
Publishing	6
Radio & TV	15
Software and Electronic Publishing	10
Video, Film and Photography	6, 14, 15
Other Arts/Cultural Activity	15

6.5 Indicators and Official Sources

The key economic impact indicators that can be derived from official secondary data sources, based on SICs and SOCs, are as follows:

- employment;
- business stock (including business size by employment band and turnover band);
- turnover (actual + bands);
- GVA;
- labour costs;
- labour productivity;
- self-employment; and
- exports.

A breakdown of the indicators and key data sources is provided in **Table 6.9**.

Other than the official economic data indicators above, there may be other secondary indicators that may be important to input to any study. For example, the number of cultural and artistic venues across Scotland. While this may tell us little above economic activity, *per se* any change in numbers can provide supporting evidence to suggest economic growth or economic decline in the sector.

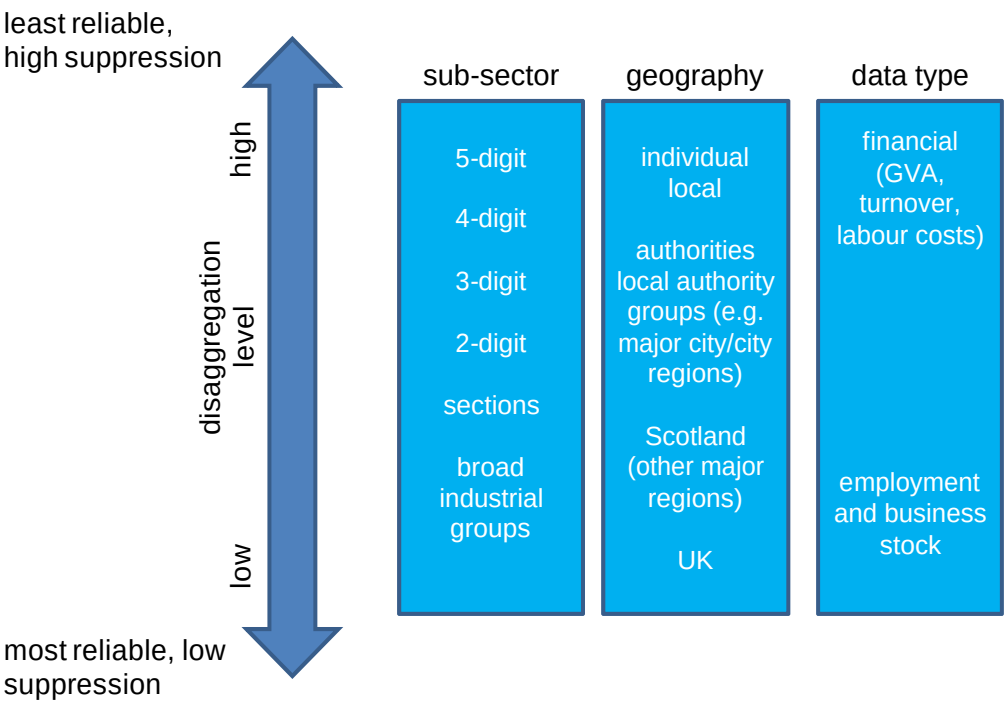
Table 6.9: Summary of Official Secondary Data for Baseline

Indicator	Source	Years available	Notes
Employment (in A&CI)	ABI	1998-2008	Available online via Nomis but only up to 4 digit SICs. Up to 5 digit SICs available but chargeable on request to ONS. Change in SIC codes, 1997, 2003, 2007. Only 2008 data is by 2007 SICs
	BRES	2008-2009	Available online via Nomis Only 2007 SIC codes. Up to 5 digit SICs
	LFS	1992-2011	Up to 4 digit SICs. Chargeable request to ONS.
Self-Employment (in A&CI)	LFS Census	1992-2011 2001	Up to 4 digit SICs. Chargeable request to ONS.
Employment (creative occupations beyond A&CI)	LFS	1992-2011	Up to 4 digit SOCs. Note use of SOCs and not SICs. Chargeable request to ONS.
Self-Employment (creative occupations beyond A&CI)	LFS	1992-2011	Up to 4 digit SOCs. Note use of SOCs and not SICs. Chargeable request to ONS.
Total Employment	Combination of above	1998-2009	But note changes in SICs and ABI and BRES not directly comparable and the combined use of SICs and SOCs.
Business Stock	IDBR	1998-2010	Up to 5 digit SICs. Chargeable request to ONS (average is £70 per day).
Turnover (bands)	IDBR	1998-2010	Up to 5 digit SICs. Chargeable request to ONS (average is £70 per day).
Turnover (actual)	ABI2 now ABS	1998-2009	Up to 5 digit SICs. Chargeable request to ONS.
Labour costs	ABI2 now ABS	1998-2009	Up to 5 digit SICs. Chargeable request to ONS.
GVA	ABI2 now ABS	1998-2009	Up to 5 digit SICs. Chargeable request to ONS. GVA can also be calculated on the average GVA per employee basis if there are issues with data suppression, based on EKOS assumptions.
Exports	ONS (but UK Level) and primary survey		Data is limited on exports. We would be required to make best use of the primary survey.

6.6 Geographical & Sector Disaggregation

With regard to both SIC and SOC based data there are issues with geographic and sectoral disaggregation to consider. Some datasets provide only limited sub-regional coverage and data can be unreliable, particularly as the degree of detailed subsector analysis increases. The *typical* scenario is described below – the greatest level of disaggregation with regards to geography and sector, the less robust the data and the greater the level of suppression. Also, there are greater levels of suppression for financial data, as opposed to more standard employment and business stock data.

Figure 6.1: Disaggregation of Data



While data is available at the local authority level and therefore, in theory, analysis of the A&CI can be done at this level, such levels result in greater suppression. But, until a bespoke request is made to ONS it is not possible to identify the extent of this suppression.

Given the definition of A&CI is based on the highest level of sectoral disaggregation (4 and 5 digit SIC level), to ensure low levels of suppression this is best countered by keeping the geographic levels high – i.e. at the Scottish level or the largest local authorities.

There are other means of countering levels of suppression (beyond keeping geographical levels high). For example:

- requesting data from ONS only at the sub-sector level identified in **Table 6.1** rather than request each individual SIC code that comprise the sub-sectors. However, this does not allow for supply chain analysis, nor does it allow identification of patterns within sub-sectors (e.g. is the bulk of advertising activity in Scotland generated from advertising agencies (*SIC 7311*) or from media representation (*SIC 7312*)?);
- requesting data that combines local authority areas into groups rather than requesting it for all individual local authorities in Scotland (e.g. Highlands and Islands to comprise Argyll & Bute[25], Eilean Siar, Highland, Moray, Orkney Islands and Shetland Islands); and
- for financial data, which is more likely to be suppressed than standard employment and business stock data, make certain assumptions. For instance, if GVA per employee in one sub-sector can be identified at the Scottish level, apply an appropriate proportion of this to lower geographies based on the economic conditions (e.g. this will typically be lower in more rural areas).

Overall, it is a balancing act and the best solution to this can only be identified once the level of suppression is identified. From our experience, there is no hard and fast rule. While the typical situation is as represented in the above, data at the same sectoral and geographical level that has been available one year is suppressed the next.

6.7 Other Data Needs

6.7.1 Key Gaps

While official ONS secondary sources will satisfy the bulk of the EIS's data requirements, there are specific areas where other sources will need to be accessed. These are in relation to: visitor activity; public sector activity; and education activity. In these areas, the data available are either only partial, or will require primary survey work. For example, there is likely to be a requirement to

[25] It is noted that Argyll & Bute is split between the Highlands and Islands and lowland Scotland.

survey the culture and leisure department within the 32 Scottish local authorities and the 41 colleges across Scotland. While not extensive in number (73), the time-scale of securing all this data is likely to be around 8 weeks as such surveys typically require significant levels of follow-up by the researchers. Nevertheless, what we understand is available should be sufficient to give reasonable estimates of the scale of A&CI related activity.

6.7.2 Visitor Activity

To assess the impact of visitor activity generated by the A&CI, then data will be required on the:

- total value of visitor expenditure which can be attributed to the A&CI;
- how these expenditures break down between spending categories, especially that which was made on and off-site; and
- multipliers that can be used to convert expenditure to other economic indicators such as employment and GVA.

In terms of visitor expenditure, it will be necessary to use an approach which seeks to apportion a share of total activity to the A&CI. This can combine a range of different data sources which:

- scale the total number of visitors and their trip expenditures. This is relatively easy to access for those making overnight stays, and is available from well established sources such as the International Passenger Survey (IPS) for overseas visitors, and the UK Tourism Survey (UKTS) for domestic visitors. Expenditure during trips is broken down sufficiently to enable identification of the most prominent off-site expenditure categories such as accommodation costs. The overall scale of day visit behaviour is more difficult to access, and tends only to be reported in one-off studies and the data that are available are dated. There are, however, some partial data for specific events or geographies which could be used as a basis for estimating the scale of activity; and
- VisitScotland can make available data on the different attractors which influenced people's decision to visit Scotland from the rest of the UK and for overseas visitors. Some of these data are not in the public domain, but VisitScotland intimated that it would consider favourable any request to

supply such information to the EIS. Similarly, there is a plethora of one-off studies, such as those examining the economic impact of Homecoming Scotland and Edinburgh's Festivals, which have looked in detail at visitor motivations, and the relative and absolute importance of different factors in trip decision making. Between them, these sources should provide some basis for making an apportionment.

While it is accepted that this approach is not ideal, the alternative would be to commission expensive primary fieldwork, with little guarantee that this would markedly improve the accuracy of final estimates of impact. At the least, the approach would give an indication of the scale and nature of the A&CI influence, albeit that the estimates derived will be subject to an unknown degree of error.

Recommendation 15

It is recommended that best use is made of existing data, both in the public domain and held by partner organisations, to enable estimates of the visitor activity attributable to the A&CI. The alternative, involving primary research with visitors, is likely to prove prohibitively expensive.

6.7.3 Public Sector Activity

There is no consistent source of data available to enable the EIS to examine the extent of A&CI within the public sector on an ongoing basis. One-off surveys have been conducted in the past, but have focussed solely on the local authority sector[26], and there is little alternative to repeating such an exercise, with appropriate extensions to include:

- non-local authority public bodies, such as Scottish Government, Scottish Enterprise, Highlands and Islands Enterprise, and, of course, Creative Scotland; and
- the key activity categories of interest, which would include general provision, as well as pre-school and school based activity of relevance.

This survey would be relatively cheap to implement, especially if on-line surveys are employed to minimise costs (the EKOS report was based on an on-line survey of all

[26] See, for example, *Culture and Leisure Services in Local Government*, EKOS Ltd, 2010

Scottish local authorities). Such a survey could also be used to collect evaluation evidence on the impact generated by organisations' development expenditure in support of the A&CI in Scotland.

Recommendation 16

It is recommended that the EIS implements a primary survey of local authority and other public organisations to assess the scale of relevant A&CI activity.

6.7.4 Education

There are two main inter-related components to this:

- the "on-site" economic impact associated with A&CI related provision; and
- the "off-site" economic impacts associated with the expenditure of students attracted to A&CI related provision.

Data on the extent of A&CI in non-tertiary education could be generated as part of the recommended survey of public sector organisations.

For tertiary education, there are separate data available for the higher and further education sectors:

- higher education: HESA produces annual data sets describing the scale and nature of provision by institution, including data on staff and student numbers by academic discipline, as well as information on the origin of students. This provides a good starting point for estimating impacts; and
- further education: data are less extensive for this sector, although it is possible to get numbers for total staff and students by broad discipline. Depending on how important it was felt this sector was to the overall analysis, primary research would be required to add detail to these aggregate numbers.

Another gap relates to the availability of data on the expenditure of students at higher and further education colleges. The best that could be done here would either be to commission primary research or to make best use of the various studies which have sought to examine the economic impact of specific institutions, which contain

data on average expenditure by students by type[27]. The latter would be sufficient to enable broad economic impact estimates to be derived.

Recommendation 17

The EIS will experience difficulties accessing all of the data needed to examine the impact of education institutions, particularly in the further education sector. A primary survey of FE colleges would help circumvent these data gaps.

[27] See for example,). *The Contribution of Higher Education to the Scottish Economy*, University of Strathclyde, for Universities Scotland, 2006

7. Conclusions and Recommendations

7.1 Introduction

The aims of the study were:

- to recommend an approach and define what is and what is not achievable through an economic impact study of Scotland's A&CI;
- to discuss and to recommend whether or not the wider social impacts should also be part of the full study, or be explored at some other time in the future;
- to recommend a model and approach for gathering information on the impact of Scotland's A&CI that can be easily replicated by partners, organisations, collectives and individuals on a longitudinal basis; and
- to explore whether the second stage of the work (the EIS) could be usefully undertaken in partnership with others at the UK, Scottish and local levels and, if so, to recommend the best approaches that should be adopted.

As noted in the introduction, it was agreed early on in the study process that the primary focus would be on economic impacts, with work on social impacts considered to be a separate exercise. Therefore, our conclusions and recommendations relate to the other three aims of the study.

7.2 Recommended Approach

Broad Approach

As discussed in Chapter 2, there are three *broad* approaches that could be taken to the study, as follows:

- Option 1: assessment of the economic impacts of specific programmes, organisations or activities;
- Option 2: assessment of the economic impact of the A&CI at the sectoral level; and
- Option 3: assessment of the value of the A&CI, including methods of assessing the value of non-marketed goods and services (e.g. contingent valuation).

The first would provide only partial estimates of the economic impacts of the A&CI *as a whole* in Scotland, and the last does not measure economic impact at all, but is instead most commonly used to assess the cost effectiveness of specific policies or activities.

Therefore, the first conclusion is that the study should follow the broad approach of Option 2 and focus on the economic impacts of the A&CI as a whole.

Secondary vs Primary Research

Within Option 2, a number of further options are then available, including:

- straightforward analysis of existing secondary data to establish the direct effects (e.g. employment and GVA attributable to organisations and individuals in the A&CI);
- broader analysis of existing secondary data to establish the direct effects and indirect (supplier linkages) and induced effects (income multipliers); and
- primary research to gather other data relevant to establishing the economic impacts of the A&CI (e.g. to refine multiplier effects).

The difficulty with the first two options is that they rely on imperfect datasets that do not always provide sufficiently detailed data to identify the different components of the A&CI (see Chapter 6).

However, primary research is expensive, difficult to replicate over time and will not necessarily correct the issues with the secondary data.

In effect, the choice reduces to one of the largely desk based application of the recommended analytical framework, against the option of undertaking primary research targeted at A&CI organisations. The advantages and disadvantages of each are summarised in the table below.

Option	Advantages	Disadvantages
Recommended Analytical Framework	• Relatively less costly than alternatives • Comprehensive in coverage • Will facilitate valid comparisons over time and against other UK regions and nations • Can be disaggregated geographically and sectorally • Has been tested	• Some data gaps, some of which would be expensive to fill • Timing of data means estimates always at least one year out of date • Data suppression can frustrate disaggregated analysis • Data access will sometimes be dependent on cooperation of other agencies
Primary Research	• Can be bespoke to specific needs • Will give up to date information • Can include a wider set of indicators as well as qualitative data • Can make use of secondary data to examine supplier linkage and multiplier effects	• Relatively expensive to implement • Will take longer to implement • Lack of population information will make it difficult to check statistical validity • Will limit scope for benchmarking and analysis of trends

As a result, our second conclusion is that the study should be largely desk based, making appropriate use of orthodox economic impact assessment techniques and data that are already available in the public domain or held by partner organisations.

Wider Effects

So far, we are talking only about the impacts of the A&CI as they relate to their business activities. It is important to remember that this will include:

- private sector organisations (or individuals) that supply goods and services to final consumers, or to other parts of the arts and creative sector as part of the value chain;
- public sector organisations (including local authorities, government agencies as well as central government) which supply goods and services to final consumers, which have a remit to develop the sector or sub-sectors, or which supply services to other organisations in the sector; and
- voluntary and charitable organisations involved in the direct or indirect supply of goods and services to final consumers.

In addition, the A&CI also constitute an important element of Scotland's tourist offering, and the study should take into account any visitor related impacts.

This then necessitates a shift beyond existing business survey data (such as that providing information on employment, GVA and multiplier effects) to include other datasets which can provide essential information on the impacts relating to the public sector and to visitor impacts.

Addressing the latter (public sector) will require a combination of secondary data analysis and primary research to fill gaps in the data that are already available (as outlined in Chapter 5). A pragmatic approach is required here, keeping primary research to a manageable level (and cost) while making best use of existing datasets.

In relation to visitor impacts, data will be required on the:

- total value of visitor expenditure which can be attributed to the A&CI;
- how these expenditures break down between spending categories, especially that which was made on and off-site; and
- multipliers that can be used to convert expenditure to other economic indicators such as employment and GVA.

Existing data sources can provide some of this information, but there are some issues (see below). The alternative would be to commission expensive primary research with little guarantee that this would markedly improve the accuracy of the impact estimates.

Therefore, our third conclusion is that the study should take account of the impacts associated with public sector activity and in relation to visitor impacts, but that this should again focus as much as possible on the use of existing secondary data (as described more fully in Chapters 5 and 6). It may be necessary to undertake some primary research in relation to public sector activity, but this should focus on known data gaps.

The overall structure of our recommended approach is illustrated in **Figure 7.1**, at the end of this Chapter.

7.3 Issues and Limitations

The broad approach that we have described is both cost effective and achievable, and will fulfil the essential criteria of robustness, replicability and transparency. It will not, however, be without problems, especially relating to gaps or data that are out of date. The key issues are:

- sector multipliers which map directly onto A&CI categories do not exist. The best alternative is to use Scottish Input-Output Table's multipliers which show the best overlap. It is considered likely that it would be prohibitively expensive to commission primary research on the scale of multipliers, even more so if the intention is to repeat the EIS over time;
- that the available tourism multipliers available are based on primary research which is nearly 20 years old. These could be up-rated to reflect known price and productivity changes since they were compiled and this will be a much more cost effective option than the alternative which is, again, to commission primary research to derive new multiplier values;
- measuring the extent of A&CI activity related to the public sector. While one-off surveys have been conducted, these have not covered all areas of interest. However, based on our own past experience, it would be relatively cheap to undertake primary research focused on local authorities and other relevant organisations; and
- measuring the activities of the further education sector and the expenditure behaviour of all students attending A&CI provision. To improve knowledge of the former would require primary research, while the latter could be addressed through making best use of past studies in this thematic area.

Despite these issues, we believe it is feasible to carry out a comprehensive EIS which would provide reasonably robust estimates of the nature and scale of the A&CI's contribution.

Timing

There are two timing issues to consider in commissioning the full EIS:

- the time-lag in the availability of secondary economic data; and
- the elapsed time necessary to complete the study.

Most relevant datasets are released annually, and can refer to data from up to two years earlier (see **Table 6.3** for current availability).

Given what is currently available and the timing of data releases for different datasets (see Chapter 6), it would seem sensible for the EIS to focus on either:

- 2009 which could be accommodated immediately; or
- 2010 which would be feasible from early 2012.

In relation to the elapsed time for the study, there are a number of issues to consider:

- the need for some primary research work (which may be less extensive and more focussed with stronger partner engagement);
- potential delays and issues in accessing secondary data from ONS;
- the extent of geographical benchmarking that will be required;
- the time necessary to undertake specific case studies; and
- the need to allow sufficient time for the collation and analysis of the various datasets, including some contingency to accommodate any requirements to revisit the raw data (where inaccuracies or discrepancies only become apparent at the analysis stage).

7.4 Options for Additional Data Analysis and Data Extensions

Beyond the Scottish level analysis described above, the data could be analysed to assess the economic impact at different geographical levels and in specific sub-sectors of the A&CI. The study could also be extended through case studies that could draw on additional data to provide a richer analysis in specific areas.

Sector and Geographic Disaggregation

Many of the estimates that would be generated through the recommended method could be presented at a national and sub-Scottish level, and by the different sub-sectors of the A&CI, although there will be further data issues when moving to the regional level. For example, only national level multipliers are available, and some

official secondary data is subject to more severe confidentiality constraints at lower levels of spatial disaggregation.

The same will also be true of specific sub-sectors of the A&CI. For example, in our previous work we have encountered difficulties with data suppression in relation to financial data on TV and Radio Production, even at the national level. Therefore, while the recommended method lends itself well to more detailed analyses at different geographical and sectoral levels, a degree of compromise will be inevitable.

Case Studies

It may also be useful to consider more detailed analyses as a series of case studies as additions to the main study. In the case of specific sub-sectors, this could extend to the inclusion of more specific data sets. For example:

- a case study analysis of the TV sector could usefully analyse data on the value of network and regional television production spend in Scotland (available from Ofcom or direct from broadcasters) as well as primary research with production companies and broadcasters since this is a more limited population than the whole of the A&CI. EKOS has completed such analyses, including work for the Scottish Broadcasting Commission;
- a case study analysis of the advertising industry could also examine data sources such as media spend data (available through Neilsen Research) as well as, again, manageable primary research with the sector;
- geographic case studies could focus on key cities, drawing comparisons with key 'creative cities' across the UK using secondary data sources (since most offer UK wide coverage) while also capturing other data that may be produced locally. This could usefully cover each of Scotland's four main city regions (Glasgow, Edinburgh, Dundee and Aberdeen) and data could be extracted at these levels. As we would expect a concentration of A&CI activity within the city regions, issues with data suppression are likely to be limited; and
- a deeper examination of the public sector role in the A&CI would also be a useful case study, albeit one that might require more extensive primary research.

The case studies should be seen as mini-studies that build upon the core method, extending it as required to include specific data sources and/or focussed primary research work as suggested above.

7.5 A Tested Approach

Many aspects of the recommended method have already been 'road-tested' in a small piece of work that we undertook in partnership with John Myerscough to assess the economic impacts of the A&CI in Glasgow.

We measured the contribution of the creative and cultural industries (CCI) to Glasgow's economy by calculating the employment and GVA generated by those working in the CCIs in Glasgow (and Greater Glasgow) and the employment and GVA generated by visitors to Glasgow as a consequence of art and cultural activity.

Official secondary published data from the ABI was used to determine direct employment in the CCI and this was combined with primary research undertaken by Myerscough (2011) on employment in the cultural sector. Input-Output multipliers were then applied to each of the subsectors of the CCI[28].

The report took account of the economic value of culture and the arts in terms of bringing visitors to Glasgow and the contribution that results from the visitors' offsite expenditure outwith the cultural attractions e.g. in accommodation, restaurants, shops, bars, etc was also assessed. The study also measured the impact of the direct expenditure in Glasgow that takes place as a result of the arts and cultural activity as well as the indirect and induced expenditure impacts in Glasgow, Greater Glasgow and Scotland.

As such, it effectively road-tested the recommended approach, with the exception of the public sector component, and found the method to be both robust and defensible. We therefore have confidence in the appropriateness of the method.

[28]There is no direct match with the I-O sector and the SICs of the CCIs.

7.6 Partnership Approach

As described in Chapter 2, Creative Scotland does not work in isolation, but collaborates with a wide range of stakeholders with an interest in the A&CI in Scotland. In the course of our consultations with these stakeholders, we found general interest in the idea of a single robust assessment of the economic impacts of the A&CI in Scotland, but none were willing, at this stage, to commit resources at the time of our discussions. Instead, many said that they would consider the merits of a more specific proposal when it was brought forward.

It is also worth bearing in mind that many of Creative Scotland's partners may be able to make a valuable contribution in a way that does not require a financial input. For example, COSLA or VOCAL would be a useful route into the collection of data from local authority partners, and VisitScotland can provide important visitor data.

National partners such as the DCMS can engage through the provision of comparable data for the UK, and sector specific bodies such as Skillset and CC Skills can add their own primary data to the mix.

Therefore, while it is unlikely that many of the partners would enter into a financial partnership for the study, many will be able to contribute valuable data and contacts. It would, therefore, be useful to schedule a 'round table' discussion with key partners in advance of commissioning the impacts study to build engagement in the approach and secure the necessary commitment to participate. This discussion should involve:

- Scottish Government;
- UK Government (DCMS);
- Arts Council England
- COSLA;
- VOCAL;
- Museums and Galleries Scotland;
- Sector bodies (e.g. Skillset, CC Skills, PACT, FST etc);
- Scottish Enterprise;
- Highlands and Islands Enterprise;
- EventScotland;
- VisitScotland; and
- Scottish Funding Council.

7.7 Recommendations

This report has made 17 detailed recommendations on the format and scope of an EIS. These are repeated below:

Summary of Detailed Recommendations
1. Any EIS should adopt the DCMS definition of A&CI, while it will also be possible to capture and present results according to the Scottish Government grouping. Adopting the DCMS definition will enable wider comparisons of the results of an EIS for Scotland with the various results available for the UK as a whole and for some of its constituent nations and regions.
2. A future EIS could also apply the CIPS approach to present more detail on the nature of the A&CI in Scotland, and to enable comparisons to previous studies that have applied this approach to Scotland, and some of its sub-regions.
3. The minimum scope of any EIS should be to examine the GVA and employment associated with the A&CI. While it will be possible to provide at least a partial analysis of other indicators of interest, GVA and employment should be the minimum scope of any Scottish level assessment. This approach will provide the means of comparing the A&CI contribution against that of other sectors in terms of the two most commonly applied indicators. It will also provide the basis for replicating the study to examine time trends.
4. Any future EIS should seek to go beyond the basic analysis of direct effects that has been the feature of many past studies of the sector at the sub-Scottish, Scottish and UK levels. This is to provide a fuller assessment of the A&CI contribution to economic activity. Chapter 5 provides an analytical framework which extends the analysis in an appropriate manner.
5. The EIS needs to take into account the economic activity generated by visitor activity induced by the A&CI.
6. The EIS needs to focus on gross impacts, and does not need to examine additionality factors normally applied to convert gross to net impacts.
7. Any EIS must recognise that: • some proportion of economic impact will not be directly observable through

economic statistics gathered on the basis of the main product or service offering of organisations (the normal way in which many economic statistics are presented). This has been recognised by other studies and some attempt made to get around the issue;

- the public sector could be a major source of economic impact, especially in areas such as the provision of A&CI related education and training, as well as development services to A&CI organisations. Again, for many public sector organisations this will only be a part of a wider service portfolio and the A&CI component might need to be disentangled; and
- there is the issue of how to deal with "unpaid" work by volunteers. In some cases this has been the subject of separate studies, confirming that the scale of volunteering is sometimes substantial.

8. The EIS needs to focus on the impacts associated with the supply of all A&CI goods and services whether these are marketed or not. Valuation techniques are not required to assess the scale of activity associated with the latter, as this will be captured by examining supply-side indicators.

9. The EIS should include treatment of the economic activity associated with the supply of goods and services to internal customers.

10. The EIS should include treatment of the off-site impacts associated with visitor expenditure generated by A&CI. Data availability will be an issue, and care will be needed to avoid double counting.

11. The EIS should include examination of the A&CI activity generated by the public sector. It is, however, recognised, that secondary data constraints may mean that only a partial analysis will be possible for some aspects of this contribution, without extensive and expensive primary data generation. Care will again be needed to avoid double-counting.

12. A future EIS should rely mainly on existing secondary data from official sources, and avoid overly expensive primary data generation exercises in areas such as compiling new tourism multipliers. While there will be some data gaps, and some instances where there is not an exact fit with what the analytical framework implies is required, there should only be a minimal need for ad hoc surveys targeted on specific issues and/or target groups.

13. While there are recognised issues that can impact on the accuracy of estimates, it is recommended that the SIC classification given in Table 6.1 be utilised in the EIS. This will enable comparisons with estimates derived for other time periods and geographies.

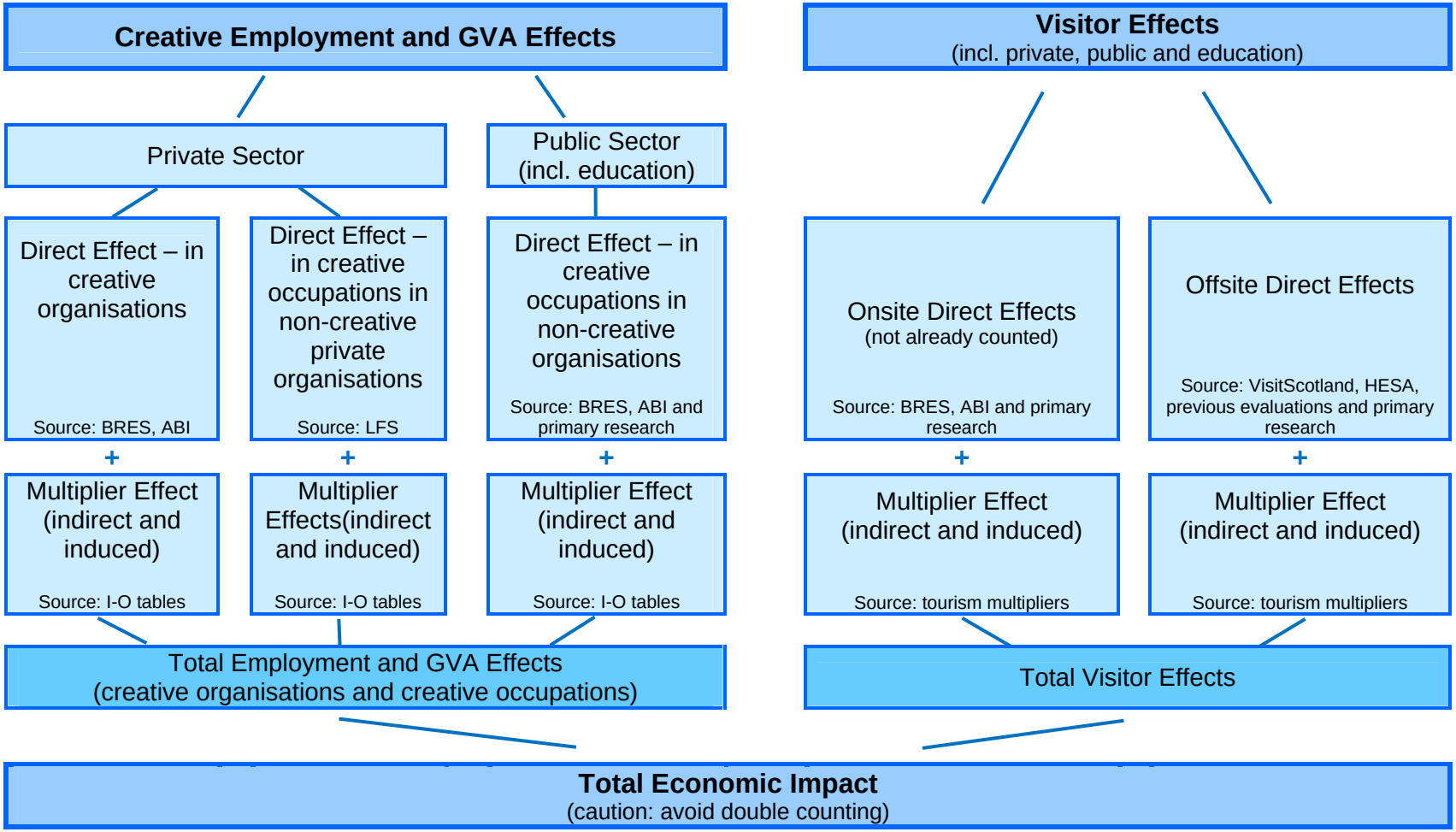
14. It is recommended that the SOC classification given in Table 6.4 be utilised in the EIS. This will enable comparisons with estimates derived for other time periods and geographies.

15. It is recommended that best use is made of existing data, both in the public domain and held by partner organisations, to enable estimates of the visitor activity attributable to the A&CI. The alternative, involving primary research with visitors, is likely to prove prohibitively expensive.

16. It is recommended that the EIS implements a primary survey of local authority and other public organisations to assess the scale of relevant A&CI activity.

17. The EIS will experience difficulties accessing all of the data needed to examine the impact of education institutions, particularly in the further education sector. A primary survey of FE Colleges would help circumvent these data gaps.

Figure 7.1: Recommended Approach



Appendix A: Literature Review

A1 Introduction

This section provides a review of the various methods available to assess the economic impact of the arts and creative industries (A&CI). It considers the strengths and weaknesses of each method and reviews a range of UK and overseas approaches.

A2 Overview

Table A.1: Overview of methods for measuring the economic impact of the A&CI

Method	Description	Strengths	Weaknesses
Economic Impact Assessment	These studies make use of primary research to gather income and expenditure data from participants and users to inform an assessment of the net economic benefits arising from the participation in A&CI activity and the return on investment achieved. Representative surveys are required to undertake effective multiplier analysis.	EIA allows arts and cultural activities and facilities to be valued in monetary terms. Value is based on actual expenditure and the decisions of individuals rather than asking about (hypothetical) willingness to pay. It is a relatively simple technique to implement when considering small regions. Useful in helping to make the case for future investment.	They are of limited value in demonstrating the overall impact of the arts and creative industries as they are often focussed on specific events, groups of events, organisations or programmes. Primary research can become expensive the wider the geographical area. Does not consider social/other wider benefits, which cannot be reduced to a monetary form. Cannot reflect 'immeasurable' effects on the places and regions in which cultural projects are located. For example, changed image and aspirations of a place and the quality of life of its residents that may be due to the impact of culture.

Baseline Assessment	This method involves defining the A&CI sector using SIC codes before conducting a review of the sources for measuring the economic impact of the sector based on that definition. The A&CI can be defined in two dimensions: • sector-based definition of the cluster; and • supply chain analyses. Multipliers are then used to estimate indirect and induced effects through supplier linkages and income effects (respectively).	Data on a large scale is relatively accessible at low cost and multipliers are publicly available. Values on both sub-regions and larger geographical locations can be gathered at no extra cost.	Lack of full coverage of the CI sector by secondary data sources means that some significant activity is missing altogether (e.g. design). Some datasets provide only limited sub-regional coverage particularly as the degree of detailed sub-sector analysis increases. Therefore, some assumptions may have to be made for missing data at smaller regional areas. Some of the official data does not include freelancers and self employed; a key characteristic of A&CI employment. Data is often 2-3 years out of date. There is no direct match with the Input-Output sector multipliers and the SICs for the A&CIs.
Baseline assessment supplemented with primary research	A solution to addressing the gaps in using a baseline assessment from secondary research is to conduct supplementary primary research. This may involve a survey of businesses and self-employed practitioners and freelancers operating in subsectors or sub regions not covered by secondary datasets.	Primary research helps present a view of current circumstances when baseline data is out of date. It allows sub regional areas to be included as well as self employed and freelance employment.	Cost of primary research increases as the size of the region in consideration becomes larger. Primary research samples need to be representative to allow conclusions to be drawn about the sector as a whole. This can be difficult to achieve in practice.
Baseline assessment supplemented with secondary research on public expenditure and tax revenue	This method takes account of the economic impact that public sector financial support has on the wider economy, supporting not only the directly funded organisations and individuals but also businesses and jobs in other sectors. In addition, it also takes into account revenues generated for the exchequer through a range of taxation channels as a result of arts organisations being supported by, for example, Arts Council funding.	Includes the economic impact of public sector expenditure and tax revenues generated as a result of public assistance for the A&CI.	There may be challenges in accessing data in relation to public sector expenditure on A&CI activity.

Contingent Valuation	Contingent valuation is based on understanding what people would be willing to pay for a particular good or service that is not typically offered direct to the market. The techniques are based on constructing a hypothetical market for the non-market goods to be valued and then attaching prices to them by asking people directly about their willingness to pay. A random sample of people is asked directly to express their maximum willingness to pay for a change in the level of provision of the good or service' to measure this.	They allow cultural activities and facilities to be valued in monetary terms. Values across individuals can be added together. Cost-benefit analysis of the returns generated by public funding of the museums, libraries and archives can be undertaken. The researcher can vary the amount of change in the public good rather than work with the data.	Complex and expensive to apply and accuracy can be affected by the way questions are asked. Those making the valuations are citizens as well as consumers and a different logic may apply to the decisions they make with regard to their willingness to pay for a good or service as a consumer and their support for funding as a citizen. People may give a willingness to pay of zero for a range of reasons, possibly in protest at being asked the question, or may overstate their true valuation of a good or service to derive a just to be seen to value something they think is socially acceptable to care about. Some may also place a negative value on this.

A3 Previous Work Undertaken

There is an extensive body of research that has been undertaken locally, nationally and internationally which seeks to assess the economic impact of the A&CI. Much of this research has revolved around estimating the total impact of the sector in terms of employment and expenditure with a view to highlighting the returns to public sector investment. In this section, we provide a review of a range of studies and the various methodologies that have been implemented in assessing the economic impact of the A&CI.

A3.1 Economic Impact Assessment

The literature would suggest that the most frequently applied economic impact assessment methodology is multiplier analysis which converts spending in an economy into direct, indirect and induced income, expenditure and employment impacts. Many of these studies consider events, groups of events or programmes of activity.

For example, BOP (2010) conducted an impact assessment of the twelve Festivals represented by Festivals Edinburgh. This was done through an extensive primary research programme of onsite, self completion and online surveys with audiences, journalists, delegates, performers and festival organisers to gather information on expenditure, length of stay and motivation for attending. More than 50 separate surveys were conducted across the twelve Festivals, involving in total more than 15,000 respondents.

Research methods employed by SQW in assessing the 2004 MTV Europe Music Awards involved collecting desk research based on previous economic impact studies, information from MTV, conducting face to face interviews with 150 spectators and a programme of consultations of various attendee groups and Edinburgh businesses. The study found that the MTV Awards yielded a total net additional expenditure of £6.4 million in the Edinburgh economy and £8.9 million in Scotland.

The British Arts Festivals Association (BAFA), 2000 commissioned research into the contribution that arts festivals make 'to the cultural, social and economic life of the

UK'. Research methods included a review of existing research, a postal survey of 137 arts festivals, analysis of programmes, annual accounts and audience research, discussions with 57 festival staff, funders, policy makers, researchers, artists and arts managers, and feedback from the Steering Group for the study and BAFA membership. The authors of this study calculated that festivals employed on a full-time, part-time or casual basis at least 7,540 people per year; that the total income of 101 arts festivals in the same period was £39.1 million, and that the total ticket sales amounted to £6.89 million.

A 2001 study by independent Northern Consultants examined both the economic and social impact of the arts in the Highlands and Islands. This was a comprehensive review, providing quantitative and qualitative data for the year 1999-2000 and compared with the findings of a similar study carried out 10 years previously. The authors drew from information from secondary sources such as reports on arts activities and impact in the Highlands and Islands, information from the Scottish Arts Council and Local Enterprise Companies, a telephone survey of venues, promoters, organisations, groups and individuals in the region, interviews with galleries, touring companies and record labels, and in depth case studies. It found that the arts supported more than 1,600 direct full-time equivalent jobs, equating to 2,500 full-time equivalent jobs (direct, indirect and induced), including multiplier effects.

Morris Hargreaves McIntyre (2009) undertook a full assessment of the economic impact of the arts based organisations and cultural sector across the city of Birmingham. The economic impacts assessment study was comprised four elements:

- financial audit: gathered attendances, ticket sales, international earnings, other income, staff salaries, staff and volunteers employed, training supplied, subsistence allowances, goods and services expenditure in the arts organisations;
- mapping: postcodes of any patrons attending performances in the past year, which were analysed and mapped;
- e-survey of attendees at events at the participating organisations in the past 6 months; and
- telephone survey of adults living in the West Midlands region.

An economic impact assessment based on audit data and visitor numbers, expenditure, length of stay data gathered from the survey was undertaken. A multiplier was applied to measure the indirect and induced effects.

A large Arts & Economic Prosperity III study (2008) was conducted by Americans for the Arts to document the economic impact of the non-profit arts and culture industry in 156 communities and regions (116 cities and counties, 35 multicounty regions, and five states), representing all 50 states and the District of Columbia.

The study focused solely on non-profit arts and culture organisations and their audiences, public arts councils and public presenting facilities/institutions. Detailed expenditure data was collected from 6,080 arts and culture organisations. The survey collected detailed information about their fiscal year 2005 expenditures in more than 40 expenditure categories, including labour, local and non-local artists, operations, materials, facilities and asset acquisition.

A total of 94,478 of their attendees were also surveyed. Using total attendance data for 2005 (collected from the organisation surveys), standard statistical methods were then used to derive a reliable estimate of total expenditures by attendees in each community. Input/output analysis was used to measure the impact of expenditures by non-profit arts and culture organizations and their audiences.

A3.2 Baseline Assessment

Baseline assessments using official secondary data sources are also very commonly used methods in the literature. Data on employment, turnover and GVA is sourced and a multiplier is often applied in order to estimate indirect and induced impacts. Studies have varied in size, from the city level to the country level as in the case of New Zealand.

EKOS (2011) measured the contribution of the creative and cultural industries (CCIs) to Glasgow's economy through calculating the following the employment and GVA generated by those working in the CCIs in Glasgow (and Greater Glasgow); and the employment and GVA generated by visitors to Glasgow as a consequence of art and cultural activity.

Official secondary published data from ABI was used to determine direct employment in the CCI and this was combined with research undertaken by

Myerscough (2011) on employment in the cultural sector. I-O multipliers were then applied to each of the subsectors of the CCI[29].

The report took account of the economic value of culture and the arts in terms of bringing visitors to Glasgow and the contribution that results from the visitors' offsite expenditure outwith the cultural attractions e.g. in accommodation, restaurants, shops, bars, etc was also assessed. The study also measured the impact of the direct expenditure in Glasgow that takes place as a result of the arts and cultural activity as well as the indirect and induced expenditure impacts in Glasgow, Greater Glasgow and Scotland.

The Myerscough (2011) Cultural Statistics Digest was developed to provide a quantitative baseline for understanding the nature of Glasgow's arts and cultural sector. The digest was assembled by making use of a wide range of existing quantitative material and secondary research from various sources. This data was aggregated together to present an overall value of the sector across a range of indicators including employment, turnover, attendances at cultural events, scale of tourism and public revenue and funding allocated towards arts and cultural activity.

These indicators were considered in relation to performance, visual arts, multi-arts, literature, audio-visual, museums, historic buildings and heritage, libraries and archives, festivals, events, education, training and outreach, voluntary organisations, markets and attendance, creative industries and tourism.

Baseline methods have also been used internationally. The Ministry for Culture and Heritage (2009) produced a comprehensive picture of the 'health' of cultural activity in New Zealand in their Cultural Industries report. The study established benchmarks and indicators to track the economic and social contribution of the cultural sector, and measure key trends over time. Official economic data and secondary research was used to measure progress against the 20 indicators which included employment in creative occupations, household spending on cultural items and median incomes from creative occupations.

Culture Statistics Programme (2007) undertook descriptive analysis of the economic contribution of the culture sector to the Canadian economy. It considered output, employment, self employment, public sector employment levels, imports and export values and government expenditure for each province. Employment and Output data

[29]There is no direct match with the I-O sector and the SICs of the CCIs.

was sourced from a number of different official published datasets. The study did not consider indirect or induced impacts.

A3.4 Baseline and Primary Research Methods

Economic baseline data from official secondary data sources is often combined with primary research in order to overcome gaps or provide a wider picture of the A&CI. This has been carried out at the regional as well as national level.

EKOS (2010) undertook an economic audit of the creative industries (CI) sector in Moray using the DCMS definition. The audit was based on the detailed analysis of official secondary data sources, a survey of businesses and individuals operating in the CI across Moray, and consultations with local partners that support the sector.

An analysis of the size, scale and economic value of the CI in Moray in terms of employment, business stock, turnover and GVA was conducted.

Brian et al (2000) estimated the economic impact of the arts and cultural industries in Wales. Data were collected from almost 190 individuals, firms and organisations in the arts and cultural industries by way of a questionnaire survey, and in addition over 70 in-depth interviews were conducted. The direct and indirect economic contributions of the industries were calculated within an input-output model of the Welsh economy. The study established that the Welsh arts and cultural industry provides employment for 28,600 people (2.6% of the workforce in Wales) and supports an estimated 6,674 jobs in other Welsh industries.

A3.5 Public Sector Expenditure and Tax Revenue

A number of studies have gone further than estimating the economic impact of the A&CI in terms of employment, turnover and GVA and have sought to consider the sector in terms of public sector expenditure (and employment supported by this) as well as tax revenue and the indirect and induced effects from this.

Indecon International (2009) undertook an assessment of the economic impact of the arts in the Irish economy. The focus of the study was on a number of key economic variables including expenditure, gross value added (GVA), employment and tax revenue. It considered three economic sectors including the impact of Arts Council supported organisations on the wider economy and provided estimates of

the total number of jobs that are supported by Arts Council funded organisations. Secondly, it reviewed the economic impact of the wider arts sector, and thirdly it presented statistics regarding the economic impact of the arts and related creative industries on the Irish economy.

The study made use of Arts Council England data on financial commitments from the Arts Council to individuals and organisations, turnover and expenditure of arts council supported organisations. Indecon developed their own model for assessing tax revenues from the arts. Official and secondary data on GVA, expenditure, employment, exchequer revenue and, where data is available, capital investment to assess the economic impact of the arts and CI sector.

Multiplier factors were applied to the direct expenditure estimates to capture the indirect and induced impacts

A3.6 Contingent Valuation

Contingent valuation has not been widely adopted for valuing culture in the UK and where it has been used, work has focused on the historic environment. There are only two major studies that have been undertaken. The Museums, Libraries and Archives (MLA) sector, a valuation of the British Library and a valuation of Bolton's museums, libraries and archives service. Jura's (2005) valuation of Bolton's museums, libraries and archives used contingent valuation to estimate the value British Library's services. A survey of users showed that both users and non-users of the service valued this provision at £10.4 million, as compared with public funding of £6.5 million.

Thomson et al (2002) considered the willingness to pay (WTP) of Kentucky households and arts patrons for an increase in the number of arts performances and exhibits or to avoid a decrease in the number of performances and exhibits. The study used survey questionnaires to ask households to reveal the value they place on public goods. It measured the value placed on arts goods rather than particular arts institutions.

Thomson et at (1983) interviewed 827 Sydney residents and asked what would be the most they would want paid out their taxes to support public funding of the arts in Sydney. The survey varied the tax liability by asking in two ways, where their taxes would change and where they would not if they were asked to pay for it. There were

also asked whether the $6 per capita should be changed and if so by how much more or less.

Holt et al (1999) reviewed the value of services at the St Louis Public Libraries. Residents were surveyed and asked what the WTP of not closing the library would be via a local increase in fees or taxes.

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Appendix B: Working Paper - Definition and Datasets

B1 Introduction

In seeking to develop a conceptual and analytical framework for the measurement of the Arts and Creative Industries (A&CI), it is necessary to first clarify a workable definition and identify the sources of data.

This Working Paper, therefore, reports on two key issues: the definition of the A&CI sector and the data sources available. Defining the A&CI sector is a necessary first stage before conducting a review of the sources for measuring the economic impact of the sector based on that definition.

B2 Defining the Creative Industries

Defining the A&CI can be considered along two dimensions:

- sector-based definition of the cluster; and
- supply chain analyses.

B2.1 Sub-sector definition

In the first attempt to define and measure the A&CI at the UK level, the UK Department for Culture Media and Sport (DCMS) defined the "creative industries" as:

'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 intellectual property.'[30]

[30] *Creative Industries Mapping Document*, Department of Culture Media and Sport, 1998.

In seeking to measure the economic scale of the A&CI, DCMS defined the sector as comprising the following industry sub-sectors:

1. advertising
2. architecture
3. art and antiques
4. crafts
5. design
6. designer fashion
7. film and video
8. interactive leisure software
9. music
10. the performing arts
11. publishing
12. software and computer services
13. television and radio

This has been slightly changed following the introduction of the new 2007 Standard Industrial Classification (SICs) codes introduced in 2010, to the following:

1. advertising
2. architecture
3. art and antiques
4. crafts
5. design
6. designer fashion
7. video, film and photography
8. digital and entertainment media
9. music
10. visual and performing arts
11. publishing
12. software and electronic publishing
13. television and radio

This is a broad and inclusive definition that is used by DCMS as a framework for the collection, analysis and reporting of economic data on the A&CI at UK level, although some sub-sectors overlap in places.

The Scottish Government adopts a sector based definition that is close to that used by DCMS:

1. advertising
2. architecture
3. art and antiques trade
4. crafts
5. computer games, software, electronic publishing
6. design
7. designer fashion
8. music and the visual and performing arts
9. publishing
10. radio and TV
11. video, film, music and photography

Creative Scotland aims to be:

"the new national leader for Scotland's arts, screen and creative industries. It's our job to help Scotland's creativity shine at home and abroad".

As a partner with COSLA, Scottish Enterprise, and Highlands and Islands Enterprise the scope of its coverage of the **creative industries** in Scotland will also be wide, with particular focus on the **screen industries** (film, TV and digital entertainment).

Any definition adopted by Creative Scotland must reflect this broad approach adopted by the DCMS and the Scottish Government.

Indeed, Creative Scotland's remit is actually broader given the focus in the **arts** sector which extends beyond the commercial creative industries. Creative Scotland's remit extends to six key artforms: crafts; dance; drama; literature; music; and visual arts. The above definition will include much of this activity particularly within the sub-sectors of *arts and antiques, crafts, music and visual and performing arts,* as well as literature activity under *publishing.*

However, what it does not cover is the wider cultural arts activity that is captured through **museums**, and this is important, particularly for demonstrating the full economic contribution of visual arts.

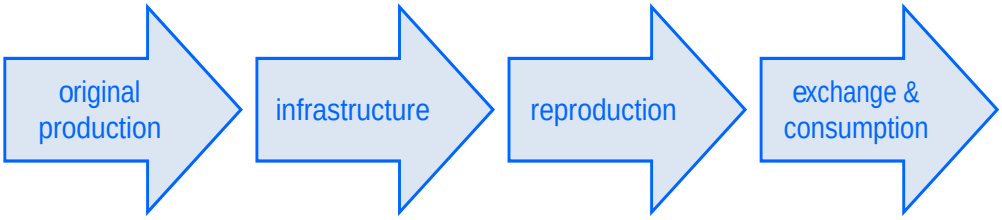
While there are advantages in developing a single consistent definition, in practice this will be a challenging goal. Different organisations must collect and analyse statistics in a way that provides them with the most useful and robust evidence on which to base policies and activities (i.e. the requirement to add museums to the definition in this study). What is more important is that the differences between the various definitions are properly understood.

B2.2 Supply Chain Analysis

In attempting to understand and measure the structure of A&CI *cluster*, it is important to consider the way in which different activities within the sector groupings interact, and identify areas of relative strength or weakness.

One popular approach to this has been to make use of the **Creative Industries Production System (CIPS)**, developed by Andy Pratt of London School of Economics[31]. The CIPS is a framework for mapping Standard Industrial Classification (SIC) codes within the production process for the A&CI as shown in **Figure B1.1**, below.

Figure B1.1: Creative Industries Production System (CIPS)



This model allows us to understand the A&CI within four distinct phases of the value production process:

- **Group 1: Original Production** – this contains activities relating to the development of creative content, including artistic and literary creation, film and television production, software (games) development and design activities;
- **Group 2: Infrastructure** – this group comprises of the manufacturing inputs to the CIPS such as the manufacture of unrecorded media, TV and radio transmitters and receivers, photographic chemical media etc.;
- **Group 3: Reproduction** – this group contains those activities aimed at reproducing and distributing creative products, including the reproduction of sound and video recording, film distribution etc.; and
- **Group 4: Exchange and Consumption** – this group includes end user access to creative content e.g. retailing of music CDs, books and games, cinema exhibition.

The CIPS model can then be overlaid onto sectoral groupings to examine the relative concentrations of activity at each stage of the production process. However, there are two issues with this:

[31] Pratt, A. (1997) ' The cultural industries production system: a case study of employment change in Britain, 1984-91 ' Environment and Planning Vol. A:29, 11.

- many A&CI companies and activities do not always fit neatly into CIPS (and indeed other supply chain models). For example, while the BBC is involved in Original Production and Reproduction, it is arguably also located in the Exchange and Consumption category; and
- SIC codes are not sufficiently detailed to allow a full analysis across the CIPS groupings.

B3 The Relevant SICs

The lack of reliable and robust economic data on the A&CI has been a persistent constraint, evident not only at Scottish and UK levels, but also internationally. The limitations of official datasets and industry classifications are well known, and are such that it is not possible to identify clearly the component sectors of the A&CI at national or regional levels. This creates obvious challenges for policy making.

In recognition of these limitations, a variety of different approaches has been taken to measure the economic contribution of the A&CI, resulting in widely varying estimates on indicators such as employment, business stock, turnover and gross value added (GVA). However, in doing so, the starting point for direct economic impact, has always been to define the sector based on SIC codes.

In developing a robust and transparent analytical framework for the measurement of the A&CI, it is essential that proper consideration is given to the **limitations of the available data**. There is, in the short term at least, little point in proposing detailed and complex definitions of the A&CI if no data are available to populate these definitions.

The limitations and issues surrounding the coverage provided by the SIC of the A&CI are well known and have been extensively described elsewhere. However, for the purposes of defining a method for the current study, some of these issues must now be considered.

The SIC is a hierarchical classification system within which the number of digits used to categorise an industry increases with the degree of disaggregation. Within the European Union, all Member States are required by law to ensure that their national industrial classification systems are identical to the European nomenclature (NACE)

to the four-digit level. National systems also contain a five-digit level determined nationally and varying across Member States.

The SIC system was designed for a manufacturing economy. It provides far less detailed coverage of service industries, and within this there are specific problems in identifying and measuring the A&CI. In particular, while some A&CI sub-sectors provide a strong match for SIC codes e.g. advertising, others are subsumed within much broader categories of activity that contain large proportions of non-A&CI activity, although some of the limitations have been addressed with the latest SIC codes – the 2007 SICs introduced in 2010.

In recognition of these difficulties, the DCMS developed a weighting system to estimate the proportion of activity within certain categories that could be attributed to the A&CI. While this might seem to be an attractive solution, there are two issues with this:

- first, it does not permit for analysis of change over time. If data record a change within a four digit SIC code (e.g. Architecture), and a proportion has been assumed to represent A&CI activity, it is impossible to determine whether or not the recorded change is attributable to that proportion or to the remainder of the activities within the category; and
- secondly, DCMS weightings were intended only for use at national (UK) level as they are not considered to be sufficiently statistically robust for use at regional levels.

As a result, the inappropriateness of SIC codes is a persistent difficulty facing the analysis of the A&CI at the Scottish level. Despite this, the A&CI data published by the Scottish Government makes use of the DCMS weightings system. The rationale for this was simply that, despite the issues mentioned above, the weightings system was felt by the Government to provide the best estimate of the scale of the industries in Scotland.

B3.1 SIC 2007 Definition

Based on the 2007 SIC codes, the definition for A&CI is presented below (**Table B3.1**). It is in line with the DCMS definition, except for one key difference – the inclusion of museum activities within the *visual and performing arts* sub-sector. As not all museum activity is related to the arts, perhaps a weighting allocation should

be applied (as the DCMS has done for other SICs). What that weighting should be would be best determined via primary research to determine which museums are arts-related and the employment within those.

The definition details the SICs within each sub-sector and it also then allocates each SIC to one of the four supply chain categories.

Table B3.1: A&CI SIC 2007 Definition

	SIC (2007)	Supply Chain
Advertising	• 7311: Advertising agencies • 7312: Media representation	• OP • OP
Architecture	• 7111: Architectural activities • 7410: Specialised design activities	• OP • OP
Arts & Antiques	• 47781: Retail sale in commercial art galleries • 47791: Retail sale of antiques including antique books, in stores	• E&C • E&C
Crafts	Majority of businesses too small to be picked up in business surveys (SOC become important)	
Design	• 7410: Specialised design activities (89.6%)	• OP
Designer Fashion	• 1411: Manufacture of leather clothes (0.5%) • 1412: Manufacture of workwear (0.5%) • 1413: Manufacture of other outerwear (0.5%) • 1414: Manufacture of underwear (0.5%) • 1419: Manufacture of other wearing apparel and accessories (0.5%) • 1420: Manufacture of articles of fur (0.5%) • 1431: Manufacture of knitted and crocheted hosiery (0.5%) • 1439: Manufacture of other knitted and crocheted apparel (0.5%) • 1512: Manufacture of luggage, handbags and the like, saddlery and harness (0.5%) • 1520: Manufacture of footwear (0.5%) • 7410: Specialised design activities (5.8%)	• Infra • Infra • Infra • Infra • Infra • Infra • Infra • Infra • Infra • Infra • OP
Digital & Entertainment Media	• 5821: Publishing of computer games • 62011: Ready-made interactive leisure and entertainment software development	• Repro • Repro
Music & Visual and Performing Arts	• 18201: Reproduction of sound recording (25%) • 5920: Sound recording and music publishing activities • 9001: Performing arts • 9002: Support activities to performing arts • 9003: Artistic creation • 9004: Operation of arts facilities • 78101: Motion picture, television and other theatrical casting (0.07%) • 91.02: Museum activities	• Repro • Repro • OP • Infra • OP • Infra • Infra • E&C
Publishing	• 5811: Book publishing • 5813: Publishing of newspapers • 5814: Publishing of journals and periodicals • 5819: Other publishing activities	• Repro • Repro • Repro • Repro

	• 6391: News agency activities	• OP
Radio & TV	• 6010: Radio broadcasting • 6020: Television programming and broadcasting activities • 59113: Television programme production activities • 5912: Motion picture, video and television programme post-production activities (81.6%) • 59133: Television programme distribution activities	• Repro • OP • OP • Repro • E&C
Software and Electronic Publishing	• 18203: Reproduction of computer media (25%) • 5829: Other software publishing • 62012: Business and domestic software development • 6202: Computer consultancy activities	• Repro • Repro • OP • OP
Video, Film and Photography	• 18202: Reproduction of video recording (25%) • 7420: Photographic activities • 59111: Motion picture production activities • 59112: Video production activities • 5912: Motion picture, video & TV post production activities (18.4%) • 59131: Motion picture distribution activities • 59132: Video distribution activities • 5914: Motion picture projection activities	• Repro • OP • OP • OP • Repro • Repro • Repro • E&C

The 2007 revisions have provided more detailed categorisation (e.g. for Software), however, a difficulty that remains is that many of the changes are felt at the five-digit level, and five-digit data are subject to confidentiality issues, particularly at sub-national levels. The Office of National Statistics (ONS) is unable to provide any guidance on the availability of five-digit data without a specific data request.

In reviewing the issues surrounding the use of SIC codes to describe and measure the A&CI in Scotland, it is clear that any analysis will require a degree of compromise. However, although imperfect, the SIC remains the only robust UK wide system of industrial classification and must form the basis of any analytical framework for the A&CI.

A decision will have to be made regarding whether or not to apply the DCMS weightings.

Data available using SICs

Data that can be captured on the following using the SIC definition is detailed below. In all cases this refers only to capturing data of those employed within A&CI occupations and not those performing creative occupations in other industries (e.g. a product designer classified in the manufacturing sector or a web designer in financial services).

Table B3.2: Data based on SICs

Indicator	Source	Years available	Next year and release date	SICs	SIC level (up to)
Employment	ABI	1998-2008	Discontinued	2003	5 digit
	BRES	2008-2009	2010 data (Dec 2011)	2007	5 digit
	LFS	1992-2011	Quarterly (Mar, Jun, Sep, Dec for nearest previous quarter)	2003 & 2007	4 digit
Self-Employment	LFS	1992-2011	Quarterly (Mar, Jun, Sep, Dec for nearest previous quarter)	2003 & 2007	4 digit
Business Stock	IDBR	1998-2010	2011 data in Sep/Oct 2011 (data at point in time of March of that year)	2003 & 2007	5 digit
Financial					
Turnover (bands)	IDBR	1998-2010	2011 data in Sep/Oct 2011 (data at point in time of March of that year)	2003 & 2007	5 digit
Turnover (actual)	ABI2 now ABS	1998-2009	2009 data in July 2011 (2010 data in July 2012)	2003 & 2007	5 digit
Labour costs	As above				
GVA	As above				

Below provides a list of abbreviations:

- ABI = Annual Business Inquiry
- ABI2 = Annual Business Inquiry 2
- ABS = Annual Business Survey
- APS = Annual Population Survey
- BRES = Business Register and Employment Survey
- LFS = Labour Force Survey

- IDBR = Inter-Departmental Business Register.

B4. The Relevant SOCs

As above, data derived using SIC codes covers employment and self-employment *within* creative companies (i.e. those that operate within the A&CI), but will not reflect:

- employees doing creative jobs in other industries (e.g. a product designer working in manufacturing); or
- self-employed people doing creative jobs in other industries.

One means of identifying this will be via the use of Standard Occupational Classifications (SOCs), which cover the occupations as opposed to the industry that individuals work in.

In an ideal world the SOCs would match the SICs but this is not the case. Therefore, it would require mapping SICs with particular SOCs and then applying a proportion of those employed in creative occupations that are self employed to the SICs. This is of course only a best fit. These have all been developed based on the 2000 SOC codes. 2010 SOC codes have recently been developed, but only to be used as part of the 2011 Census to date.

Such a best fit is identified below in **Table B4.1**. Our definition includes some SOCs that have not been adopted by DCMS. These are in blue font. Also highlighted in red font are those that cross between two sub-sectors. To avoid double-counting these will require to be allocated to one sub-sector or a proportion allocated to each of the sub-sectors. This has been done by the DCMS for *3422: Product, clothing and related designer professionals* which has been split between Design (93.9%) and Designer Fashion (6.1%). However, this has not been done for a number of other occupations which we believe straddle two different sub-sectors. These include:

- 3411: Artists (Design and Visual and Performing Arts);
- 3412: Authors, writers (Music, Visual and Performing Arts, and Publishing);
- 3421: Graphic designers (Design and Software and Electronic Publishing);

- 3432: Broadcasting associate professionals (Radio and TV and Video, Film and Photography; and
- 5494: Musical instrument makers and tuners (Crafts and Music)

Table B4.1: A&CI 2000 SOC Definition

	SIC (2007)	SOC (2000)
Advertising	• 7311: Advertising agencies • 7312: Media representation	• 1134: Advertising & public relations managers • 3433: Public relations officers • 3543: marketing associate professionals
Architecture	• 7111: Architectural activities • 7410: Specialised design activities	• 2431: Architects • 2432: Town planners • 3121: Architectural technologists and Town planning technicians
Arts & Antiques	• 47781: Retail sale in commercial art galleries • 47791: Retail sale of antiques including antique books, in stores	No match - see visual and performing arts
Crafts	Majority of businesses too small to be picked up in business surveys (SOC become important)	• 5491: Glass and ceramics makers; decorators and finishers • 5492: Furniture makers; other craft woodworkers • 5493: Pattern makers (moulds) • 5494: Musical instrument makers and tuners • 5495: Goldsmiths, silversmiths, precious stone workers • 5496: Floral arrangers, florists • 5499: Hand craft occupations n.e.c. • 8112: Glass and ceramics process operatives • 9121: labourers in building and woodworking trades (5%)
Design	• 7410: Specialised design activities (89.6%)	• 2126: Design and development engineers • 3411: Artists • 3421: Graphic designers • 3422: Product, clothing and related designers (93.9%)

Designer Fashion	• 1411: Manufacture of leather clothes (0.5%) • 1412: Manufacture of workwear (0.5%) • 1413: Manufacture of other outerwear (0.5%) • 1414: Manufacture of underwear (0.5%) • 1419: Manufacture of other wearing apparel and accessories (0.5%) • 1420: Manufacture of articles of fur (0.5%) • 1431: Manufacture of knitted and crocheted hosiery (0.5%) • 1439: Manufacture of other knitted and crocheted apparel (0.5%) • 1512: Manufacture of luggage, handbags and the like, saddlery and harness (0.5%) • 1520: Manufacture of footwear (0.5%) • 7410: Specialised design activities (5.8%)	• 5411: Weavers and knitters • 5414: Tailors and dressmakers • 5419: Textiles; garments and related trades n.e.c. • 3422: Product, clothing and related designers (6.1%)
Digital & Entertainment Media	• 5821: Publishing of computer games • 62011: Ready-made interactive leisure and entertainment software development	No matches - see software
Music & Visual and Performing Arts	• 18201: Reproduction of sound recording (25%) • 5920: Sound recording and music publishing activities • 9001: Performing arts • 9002: Support activities to performing arts • 9003: Artistic creation • 9004: Operation of arts facilities • 78101: Motion picture, television and other theatrical casting (0.07%) • 91.02: Museum activities	• 3411: Artists • 3412: Authors, writers • 3413: Actors, entertainers • 3414: Dancers and choreographers • 3415: Musicians • 3416: Arts officers, producers and directors • 5494: Musical instrument makers and tuners
Publishing	• 5811: Book publishing • 5813: Publishing of newspapers • 5814: Publishing of journals and periodicals • 5819: Other publishing activities • 6391: News agency activities	• 3412: Authors, writers • 3431: Journalists, newspaper and periodical editors • 5421: Originators, compositors and print preparers • 5422: Printers • 5423: Bookbinders and print finishers • 5424: Screen printers

Radio & TV	• 6010: Radio broadcasting • 6020: Television programming and broadcasting activities • 59113: Television programme production activities • 5912: Motion picture, video and television programme post-production activities (81.6%) • 59133: Television programme distribution activities	• 3432: Broadcasting associate professionals • 5244: TV, video and audio engineers
Software and Electronic Publishing	• 18203: Reproduction of computer media (25%) • 5829: Other software publishing • 62012: Business and domestic software development • 6202: Computer consultancy activities	• 213: Information & Communication Technology Professionals • 2132 Software professionals • 2131: IT strategy and planning professionals • 3421: Graphic designers
Video, Film and Photography	• 18202: Reproduction of video recording (25%) • 7420: Photographic activities • 59111: Motion picture production activities • 59112: Video production activities • 5912: Motion picture, video & TV post production activities (18.4%) • 59131: Motion picture distribution activities • 59132: Video distribution activities • 5914: Motion picture projection activities	• 3434: Photographers and audio-visual equipment operators • 3432: Broadcasting associate professionals
Other Arts/Cultural Activity	• 9102: Museum activities	No available SOCs

Data available using SOCs

The data that can be captured using the SOC definition is as follows:

- self-employment both within A&CI and in creative occupations beyond A&CI; and
- employment both within A&CI and in creative occupations beyond A&CI.

The data sources are either the LFS or the census with the information on release dates and latest data provided below.

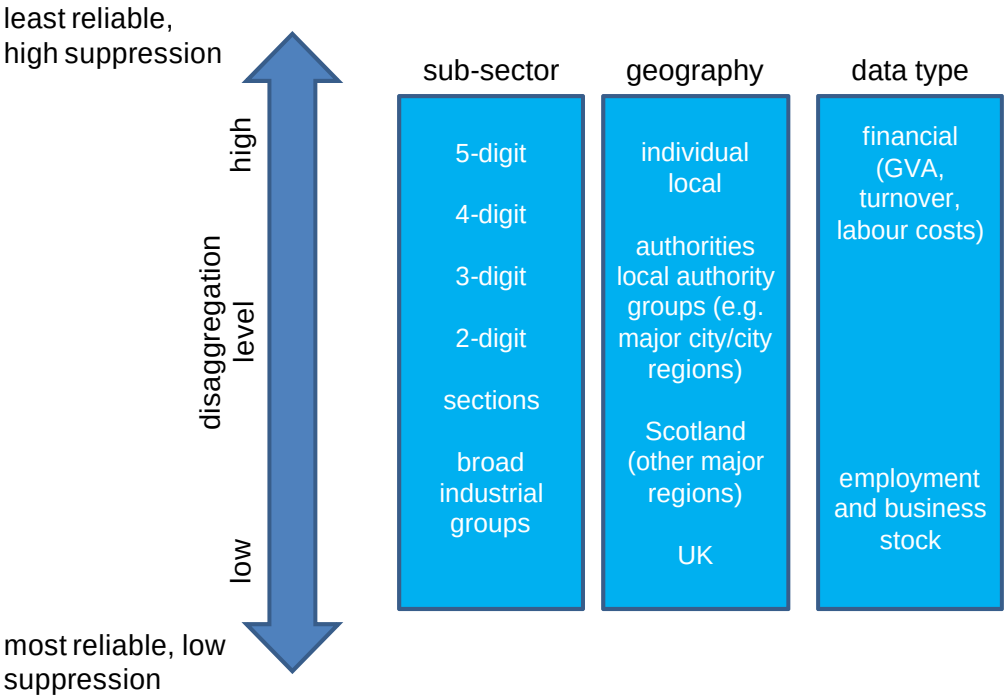
Table B4.2: Data based on 2000 SOCs

Indicator	Source	Years available	Next year and release date
Employment and self employment (within A&CI) and (in creative occupations beyond A&CI)	LFS	1992-2011	Quarterly (Mar, Jun, Sep, Dec for nearest previous quarter)
	Census	2001	2011 Census (data due 2014)

B5 Geographical & Sector Disaggregation

With regard to both SIC and SOC based data there are issues with geographic and sectoral disaggregation to consider. Some datasets provide only limited sub-regional coverage and data can be unreliable, particularly as the degree of detailed subsector analysis increases. The *typical* scenario is as described below – the greatest level of disaggregation with regards to geography and sector, the less robust the data and the greater the level of suppression. Also, there are greater levels of suppression for financial data, as opposed to more standard employment and business stock data.

Figure B5.1: Disaggregation of Data



While data is available at the local authority level and therefore, in theory, analysis of the A&CI can be done at this level, such levels result in greater suppression. But, until a bespoke request is made to ONS it is not possible to identify the extent of this suppression.

Given the definition of A&CI is based on the highest level of sectoral disaggregation (4 and 5 digit SIC level), to ensure low levels of suppression this is best countered by keeping the geographic levels high – i.e. at the Scottish level or the largest local authorities.

There are other means of countering levels of suppression (beyond keeping geographical levels high). For example:

- requesting data from ONS only at the 12 sub-sectors identified in **Table B3.1** rather than request each individual SIC code that comprise the sub-sectors. However, this does not allow for supply chain analysis, nor does it allow identification of patterns within sub-sectors (e.g. is the bulk of advertising activity in Scotland generated from advertising agencies (*SIC 7311*) or from media representation (*SIC 7312*)?);

- requesting data that combines local authority areas into groups rather than requesting it for all individual local authorities in Scotland (e.g. Highlands and Islands to comprise Argyll & Bute[32], Eilean Siar, Highland, Moray, Orkney Islands and Shetland Islands); and
- for financial data, which is more likely to be suppressed than standard employment and business stock data, make certain assumptions. For instance, if GVA per employee in one sub-sector can be identified at the Scottish level, apply an appropriate proportion of this to lower geographies based on the economic conditions (e.g. this will typically be lower in more rural areas).

Overall, it is a balancing act and the best solution to this can only be identified once the level of suppression is identified. From our experience, there is no hard and fast rule. While the typical situation is as represented in the above, data at the same sectoral and geographical level that has been available one year is suppressed the next.

B6 Input-Output Tables

When making use of the SIC and SOC data to determine employment and income generated by the A&CI, this only covers the direct effects. Input-Output tables provide a complete picture of the flows of goods and services (products) in the economy for a given year. They detail the relationship between producers and consumers and the interdependencies of industries.

In particular, they provide the **multiplier effect**; if there is an increase in **final demand** for a particular product, we can assume that there will be an increase in the output of that product, as producers react to meet the increased demand; this is the **direct effect**. As these producers increase their output, there will also be an increase in demand on their suppliers and so on down the supply chain; this is the **indirect effect**. As a result of the direct and indirect effects the level of household income throughout the economy will increase as a result of increased employment. A proportion of this increased income will be re-spent on final goods and services:

[32] It is noted that Argyll & Bute is split between the Highlands and Islands and lowland Scotland.

this is the **induced effect**. The ability to quantify these multiplier effects is important as it allows economic impact analyses to be carried out on the Scottish economy.

The multipliers will vary depending on the industry in which the direct effect occurs, and therefore we have to identify the multiplier effect of the A&CI.

This is difficult as, notwithstanding the challenges above with the SICs, there is no direct match with the I-O sector and the SICs of the A&CI.

In total there are 123 I-O sectors identified and only 14 of these can be considered to be within sub-sectors of the A&CI, although the match here in some cases is tenuous. **Table B6.1** details those which can be considered to be part of the A&CI are detailed below. **Table B6.2** details the SICs that comprise each of the industry groups.

It is important to note that these multipliers are national level multipliers. If the analysis is to be done at the sub-regional level in Scotland, these have to be adjusted accordingly. There is little data to inform such an adjustment, and standard practice is to apply between half and two thirds of the national value depending on the scale of sub-region being investigated.

Table B6.1: Type II Multipliers (Scotland, 2007)

	Industry Group	Output multiplier	Income multiplier	Employment multiplier	GVA multiplier
1	Textile weaving	1.84	1.64	1.86	1.99
2	Textile finishing	1.84	1.62	1.67	1.91
3	Other textiles	1.78	1.74	2.06	2.21
4	Knitted goods	1.65	1.55	1.39	1.78
5	Wearing apparel & fur products	1.64	1.52	1.67	1.74
6	Printing & publishing	1.69	1.57	1.71	1.71
7	Glass & glass products	1.76	1.58	1.70	1.84
8	Ceramic goods	1.70	1.53	1.67	1.81
9	Jewellery & related products	1.48	1.55	1.49	1.49
10	Computing services	1.68	1.47	1.64	1.61
11	Architectural activities etc	1.75	1.62	1.78	1.70
12	Advertising	1.61	1.50	1.55	1.51
13	Marketing research	1.68	1.58	1.63	1.66
14	Other business services	1.63	1.53	1.43	1.55
15	Recreational services	1.91	2.15	2.24	2.20

Table B6.2: Type II Multipliers (Scotland, 2007), relevant SICs

	Industry Group	SICs (2003)
1	Textile weaving	17.2: Textile weaving
2	Textile finishing	17.3: Textile finishing
3	Other textiles	17.52: Manufacture of cordage, rope, twine and netting 17.53: Manufacture of non-wovens and articles made from non-wovens, except apparel 17.54: Manufacture of other textiles n.e.c
4	Knitted goods	17.6: Manufacture of knitted and crocheted fabrics 17.7: Manufacture of knitted and crocheted articles
5	Wearing apparel & fur products	18: Wearing apparel & fur products
6	Printing & publishing	22: Printing & publishing
7	Glass & glass products	26.1: Glass & glass products
8	Ceramic goods	26.2 Manufacture of non-refractory ceramic goods other than for construction purposes; manufacture of refractory ceramic product 26.3: Manufacture of ceramic tiles and flags
9	Jewellery & related products	36.2: Manufacture of jewellery and related articles 36.3: Manufacture of musical instruments
10	Computing services	72: Computer and related activities
11	Architectural activities etc	74.2: Architectural and engineering activities and related technical consultancy 74.3: Technical testing and analysis
12	Advertising	74.4: Advertising
13	Market Research	74.13: Market research and public opinion polling 74.14: Business and management consultancy activities 74.15: Management activities of holding companies
14	Other business services	74.5: Labour recruitment and provision of personnel 74.6: Investigation and security activities 74.7: Industrial cleaning 74.8: Miscellaneous business activities n.e.c
15	Recreational services	92: Recreational, cultural and sporting activities

As the tables above show, there is a very loose fit between the available multipliers and the sub-sectors of the A&CI. Matching them to each sub-sector is given in **Table B6.3.** However, any use of these multipliers must come with such a caveat.

Table B6.3: Sub-sector and relevant multiplier (from above)

Sub-Sector	Multiplier
Advertising	12
Architecture	11
Arts & Antiques	15
Crafts	7, 8, 9
Design	13
Designer Fashion	1, 2, 3, 4, 5
Digital & Entertainment Media	10
Music & Visual and Performing Arts	6, 15
Publishing	6
Radio & TV	15
Software and Electronic Publishing	10
Video, Film and Photography	6, 14, 15
Other Arts/Cultural Activity	15

B7 Economic Measures & Sources

The key economic measures that can be used based on SICs and SOCs is as follows:

- employment;
- business stock (including business size by employment band and turnover band);
- turnover (actual + bands);
- GVA;
- labour costs;
- labour productivity;
- self-employment; and
- exports.

A full breakdown of the data and sources that will be used is provided in **Table B7.1** over.

Table B7.1: Summary of Data for Baseline

Indicator	Source	Years available	Notes
Employment (in A&CI)	ABI	1998-2008	Available online via Nomis but only up to 4 digit SICs. Up to 5 digit SICs available but chargeable on request to ONS. Change in SIC codes, 1997, 2003, 2007. Only 2008 data is by 2007 SICs
	BRES	2008-2009	Available online via Nomis Only 2007 SIC codes. Up to 5 digit SICs
	LFS	1992-2011	Up to 4 digit SICs. Chargeable request to ONS.
Self-Employment (in A&CI)	LFS Census	1992-2011 2001	Up to 4 digit SICs. Chargeable request to ONS.
Employment (creative occupations beyond A&CI)	LFS	1992-2011	Up to 4 digit SOCs. note use of SOCs and not SICs. Chargeable request to ONS.
Self-Employment (creative occupations beyond A&CI)	LFS	1992-2011	Up to 4 digit SOCs. note use of SOCs and not SICs. Chargeable request to ONS.
Total Employment	Combination of above	1998-2009	But note changes in SICs and ABI and BRES not directly comparable and the combined use of SICs and SOCs.
Business Stock	IDBR	1998-2010	Up to 5 digit SICs. Chargeable request to ONS (average is £70 per day).
Turnover (bands)	IDBR	1998-2010	Up to 5 digit SICs. Chargeable request to ONS (average is £70 per day).
Turnover (actual)	ABI2 now ABS	1998-2009	Up to 5 digit SICs. Chargeable request to ONS.
Labour costs	ABI2 now ABS	1998-2009	Up to 5 digit SICs. Chargeable request to ONS.
GVA	ABI2 now ABS	1998-2009	Up to 5 digit SICs. Chargeable request to ONS. GVA can also be calculated on the average GVA per employee basis if there are issues with data suppression, based on EKOS assumptions
Exports	ONS (but UK Level) and primary survey		Data is limited on exports. We would be required to make best use of the primary survey.

Appendix C: Partner Consultee List

Name	Title	Organisation
Linda McPherson	Head of Creative Industries	Scottish Enterprise
Richard Wilkins	Head of Broadcasting Policy	Scottish Government
Heather Stuart	Chair	VOCAL
Ann Marie Collins	Acting Director of Research and Evaluation	Skillset
Jonathan Smith	Business Manager	Event Scotland
Hasan Bakshi	Director of Creative Industries	NESTA
Ben Reid	Senior Researcher	The Work Foundation
Alison Turnbull	Head of Research and Standards	Museums Galleries Scotland