



M a k i n g B u s i n e s s S e n s e

The contribution of the arts and culture to the national economy

An analysis of the macroeconomic contribution of the arts and culture and of some of their indirect contributions through spillover effects felt in the wider economy

Report for Arts Council England and the National Museums Directors' Council

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Executive summary

This is a summary of Centre for Economics and Business Research's (Cebr) study on the contribution made by the arts and culture to the UK's national and regional economies.

The study combined desk and primary research. Quantitative data drawn from these sources, and from the Office for National Statistics (ONS) were used to provide the 'business economy' review and the macroeconomic impact assessment of the 'arts and culture industry' featured in sections 2 and 3 of the report. The more qualitative intelligence obtained from our secondary research and from the survey responses and in-depth interviews were used in the four sections on spillovers (sections 4 to 7).

We summarise below the results of our study under headings that correspond with the sections of the report's main body. This is preceded by a brief and non-technical overview of the study's scope and the methodology adopted for the more quantitative aspects of the study.

Scope and methodological overview

The analysis of the 'business economy' and macroeconomic impacts of the arts and culture industry draws upon official data provided by the ONS. Economic indicators including revenues, costs of production and value-added are provided for hundreds of disaggregated industries. These are broken down according to the Standard Industrial Classification (SIC) framework which provides the underlying data collection framework for much of the economic data produced by ONS.

By identifying the activities within the SIC framework that constitute arts and cultural activities and using the corresponding figures for these activities from these datasets, we were able to measure, at a national and regional level, the economic characteristics of the arts and culture industry and its direct macroeconomic impacts upon the economy. This set of activities defined the scope of the study in terms of the economic activities to be included in our industry definition of the arts and culture. We set out to cover six art forms: theatre, dance, literature, visual arts, music and combined arts, as well as museums. Due to limitations in official data for museums, it was not possible to include them in the 'business economy' and macroeconomic impact analysis.

The multiplier impacts of the arts and culture industry were estimated using Cebr's input-output models, which draw on the ONS national accounting framework. We use these input-output models to determine the sectors from which the arts and culture industry purchases its inputs, tracing the industry's economic footprint through its supply chain relationships with other sectors, generating output and employment in those sectors and increasing earnings and employee spending in the wider economy.

This approach is consistent with the methods used by ONS when it produces industry-level multiplier estimates, the last time being in 2005. While these methods are not inconsistent with official HM Treasury guidance, as articulated in the *Green Book*, they serve very different purposes. The *Green Book* provides guidance on producing economic impact assessments (EIA), which are concerned with measuring **changes in the economic landscape** as a result of a new organisation, event or investment. This guidance in turn provides the foundation for the Arts Council's guidelines on measuring local economic impacts of arts and cultural investments or projects, which advocate the need to capture the impacts that are 'additional', such as the additional spending of visitors attracted by the new investment or project over and above the spending of visitors that would have been attracted to the area without the investment or project.

This is distinct from the macroeconomic impact assessment undertaken for this study, which is based on the arts and culture industry as it exists today. This type of assessment, in other words, **takes the existing economic landscape as a given** and measures, on that basis, the impacts of the industry or sector under investigation (the arts and culture industry in this case). The concept of ‘additionality’ in this context would be concerned with the impacts that are additional as a result of the existence of the arts and culture industry and that would not have been generated elsewhere in the absence of the industry. However, the fact is that the arts and culture industry, like all other industries for which data are reported by ONS, does exist and does have impacts in its current form. These impacts are what this study sought to measure.

Data that would be useful in quantifying the value of spillovers from arts and culture to the wider economy are much sparser. For that reason, the results and conclusions of the later sections are based much less on systematic modelling using national statistics and much more on a mixture of the qualitative intelligence gleaned from secondary research, from our primary research (consisting of responses to a survey and a more limited set of in-depth interviews) and from whatever quantitative data we could obtain from them or from sources suggested by them. We used deductive and econometric techniques to examine certain specific spillover benefits. These sections cover all six art forms and museums.

‘Business economy’ highlights

Based on our review of data provided almost exclusively by business enterprises through surveys (by either ONS or the Arts Council), our findings are that:

- Businesses in the UK arts and culture industry generated an aggregate turnover of £12.4 billion in 2011, which is 3.5 per cent lower than its peak in 2008. The subsets of the arts and culture industry’s productive activities of book publishing, performing arts and artistic creation are the largest contributors to the industry’s aggregate turnover performance.
- This led those businesses to contribute an estimated £5.9 billion of gross value added (GVA) to the UK economy, also in 2011. However, the GVA contribution of these businesses has grown since 2008, in contrast to turnover. Closer analysis reveals that businesses in the arts and culture industry have been successful in cutting costs and have thus, by increasing their GVA, increased their contribution to UK GDP even as the wider economy contracted.
- While labour productivity in the arts and culture industry might be considered relatively low, significant subsets of the productive activities that make up the industry do have high productivity relative to national averages. For instance, GVA per full-time equivalent (FTE) in book publishing was 44 per cent higher than the national average in 2011, while artistic creation was 21 per cent higher.
- The arts and culture industry employed, on average, 110,600 full-time equivalent employees in the UK and 99,500 in England during the period 2008-2011. This represents about 0.45 per cent of total employment in the UK and 0.48 per cent of all employment in England. The performing arts and artistic creation subsets of activities were the largest contributors to all employment by the arts and culture industry, at 33.1 per cent and 25.6 per cent, respectively.
- Consumer expenditure on the arts and culture appears to have continued increasing in real terms from 2008 until 2010. But the most recent data suggests the industry suffered a decline in real terms between the second quarter of 2011 and 2012, with only a slight recovery in the third quarter of 2012.

- Nonetheless, the greatest contributor to the overall funding of the industry (that is, including public funding and third-party charitable donations) has been and still is earned income. In other words, it might be said that arts and culture is experiencing a pincer movement effect in the aftermath of the financial crisis, reduced consumer expenditure due to squeezed incomes and reduced public funding.

Macroeconomic impacts of arts and culture

Based on our analysis of the arts and culture industry within the ONS national accounting framework, specifically the supply-use tables and Cebr's input-output models, we conclude that:

- The arts and cultural sector accounts for approximately 0.4 per cent of UK GDP and 0.4 per cent of GVA in England. This rises to one per cent of UK GDP when indirect and induced multiplier impacts are taken into account. The industry is estimated to have a high GVA multiplier compared to other sectors of the economy.
- Once the indirect and induced multiplier impacts of arts and culture are taken into account, the industry is estimated to support an aggregate 260,300 full-time equivalent jobs or 1.1 per cent of total UK employment. (This includes the direct employment impacts outlined in the 'business economy' review above as well as the multiplier impacts.)
- The arts and culture industry pays nearly five per cent more than the UK median salary of £26,095, thereby making a positive contribution to average household earnings. Furthermore, for every £1 of salary paid by the arts and culture industry, an additional £2.01 is generated in the wider economy through indirect and induced multiplier impacts. The industry has a high salary income multiplier relative to other broad sectors of the economy, which we suspect relates to the relatively high levels of pay in the sectors and industries from which the arts and culture sources intermediate inputs, including not least the creative industries, which account for 26 per cent of the arts and culture industry's supply chain.
- The arts and culture industry's average contribution to the UK's constituent national and regional economies was 0.4 per cent (of regional GVA). But, while the London arts and culture industry makes a larger contribution to the London economy than the equivalent contribution to any other region at 0.57 per cent (of London GVA), it has the smallest regional multiplier impact. This means the London economy is unable to fully supply the needs of its arts and culture industry, meaning that more of its inputs must be sourced from outside the region, reducing the multiplier effects realised within the region itself. Other insights are provided on the other national and regional economies of the UK.

Spillover impacts through tourism

Our analysis of the spillover impact of arts and culture industry through tourism revealed that:

- Overall, 10 million inbound visits to the UK involved engagement with the arts and culture, representing 32 per cent of all visits to the UK and 42 per cent of all inbound tourism-related expenditure, amounting to £7.6 billion. However, much of this could not be considered additional.
- What can with certainty be considered additional is the £38 million of expenditure by visitors arriving on holiday in the UK in 2011 who engaged only with arts and culture. But if our

assessment was restricted to this category of tourist, we would almost certainly underestimate what could be considered additional as a result of arts and culture.

- Most people who come to the UK primarily for arts and culture could be expected to engage in other activities while visiting. By including the expenditure of people who engaged not just in arts and cultural activities but in up to four other activities, the tourism expenditure that can be associated with arts and culture increases.
- Limiting this to two additional activities results in an estimate for the inbound tourism expenditures that can be considered additional due to the arts and culture of £635 million. This is 3.6 per cent of the spending of all visitors to the UK and 7.7 per cent of that of all holiday visitors.
- To this, we added a reasonable (lower bound) estimate, based on an update of earlier work by Travers (2004), of £221.4 million of expenditures by international visitors that are attributable to the arts and culture when this is not the main purpose of their visit.
- This led to our aggregate estimate for the impact of arts and culture through tourism of an additional £856 million of inbound tourism-related expenditures.

The role of the arts and culture in supporting commercial creative industries

Commercial creative industries (as recently defined by Nesta) are estimated to provide nearly five per cent of UK employment, 10 per cent of UK GDP and 11 per cent of the UK's service exports. Arts and culture plays a significant role in supporting these industries, as the following findings suggest:

- The evidence from our primary research demonstrates the apparent breadth of the links between the arts and cultural sector and the commercial creative industries. Numerous examples are provided in the report. The commercial creative industries are, moreover, estimated to account for over 26 per cent of the arts and culture industry's supply chain. Organisations in regular receipt of Arts Council funding are estimated to have commissioned 27,913 new works from 14,758 artists in the UK during financial year 2011-12.
- The support provided to the commercial creative industries by the arts and culture industry does not stop there however. Recent evidence from academic research suggests that proximity to arts and culture can translate into higher wages and productivity. This might be explained by, among other things, the diffusion of innovative content and ideas from arts and culture to the commercial creative industries. The importance of this is illustrated by the fact that many fashion designers, for example, draw upon the Victoria and Albert Museum's archives as a source of inspiration.
- Similarly, public funding of arts and culture can play a vital role in encouraging creative innovation, overcoming private sector reluctance to invest in risky projects, providing opportunities to explore the potential of new ideas and removing the pressure for new products to always be commercially successful. Such challenging, innovative work can, in some cases, go on to great commercial success, as in the case of *War Horse*. Inspired by puppetry on show at Battersea Arts Centre, this National Theatre production went on to win numerous awards at home and abroad, have sell-out runs on Broadway and in Toronto, inspire a hit film and is currently touring Australia and Germany.
- The arts and culture industry can also provide incubators for creative talent, giving people at the beginning of their creative careers opportunities to showcase their creations or perform while being exposed to the best of existing talent. The industry also showcases the UK's creative

talent overseas. This generates exports, ultimately resulting in a flow of income to the UK. For example, the Natural History Museum's exhibitions have been shown in more than 65 countries, while Vane, a small gallery in Newcastle-upon-Tyne, showcases the work of British artists at trade shows in New York.

- Work placements and trainee schemes in the arts and culture can help provide the skilled labour inputs that the UK's creative industries need to flourish. Nearly three-quarters (74.4 per cent) of arts and cultural organisations that are regularly funded through the Arts Council provide some sort of work experience, apprenticeship or internship.
- These placements allow graduates to develop the skills required to work in a creative industry and thus to unlock the benefits of their education. Creative Apprenticeships are another important route into the sector that has, in turn, been shown to bestow on their participants a wage premium of between four and 18 per cent.
- The arts and culture industry also provides business support to new commercial creative enterprises. By providing mentoring, opportunities to network, low-cost work space and advice about intellectual property and business issues to commercial creative businesses, arts and culture makes a vital contribution to the development of the sector. A prominent example is the British Library's Business and Intellectual Property Centre, but smaller organisations support creative businesses too. The Hepworth Wakefield organises regular networking events, while Cheshire Rural Touring Network offers a mentorship programme
- There is no doubt that the provision of these kinds of support by arts and culture improves the chances that nascent commercial creative businesses will receive recognition and become successful.

Spillover impacts of arts and culture that improve national productivity

Arts and culture also supports productivity in the workforce as a whole. Engagement with arts and culture helps to develop people's critical thinking, to cultivate creative problem-solving and to communicate and express themselves effectively. For adults and children alike, these skills improve intellectual ability and wellbeing, enabling greater success in day-to-day endeavours. These individual-level benefits, taken in aggregate, represent improvements to the effectiveness and flexibility of the nation's workforce, with positive impacts on productivity, not to mention better long-term health outcomes and reduced crime. Our findings on the role of arts and culture in boosting national productivity are:

- Artistic education is important for developing creativity, an essential supporting pillar of the UK's increasingly knowledge-based economy. Continual innovation and creativity in knowledge-intensive activities are imperative to maintain growth. Education in arts and culture fosters this creativity.
- Unfortunately, it is not a straightforward matter to measure these effects, not least because the benefits to productivity and competitiveness are felt in the long term and there are, of course, many other factors that contribute to these. However, academic attainment and transferrable skills that result are two areas where we have been able to find some evidence.
- On top of the plethora of existing evidence reviewed in the report, Cebr's survey and interview evidence revealed that many organisations in the arts and culture have organised at least one long-term partnership with a local school. Prominent examples include the British Library's Young Researchers programme, which encourages young people at local schools to engage with

the library's collections through creative projects, and National Museums Wales *Bling* project, which offered young people the opportunity to explore how precious metals are used to express status, image and taste. The Arts Council funds a network of 'Bridge Organisations', which connect schools and communities with National portfolio organisations (NPOs) and others in the cultural sector, including museums and libraries.

- Education in arts and culture is also associated with improvements in transferrable skills that bring benefits in later life, such as better communication and social skills, which increases the chance of young people staying in school beyond the age of 16 and improving the likelihood of them gaining employment. This has knock-on effects on participation in and the productivity of the workforce.
- But higher education in arts and culture can also bring employability and productivity benefits. Indeed, existing research suggests that graduates of the creative arts subjects are estimated to enjoy a 35 per cent wage premium over non-graduates working in the creative industries over the course of their careers.
- Arts and culture also plays an important role in supporting research activities, with many having officially recognised research status and working with universities to supervise research degrees. Prominent examples include Tyne and Wear Museums, Ironbridge Gorge Museums Trust, Southbank Centre, Whitechapel Gallery, Natural History Museum, Imperial War Museums and the Opera Group. Based on Arts Council data from its NPOs, 599 organisations had a relationship with a higher education institution while national museums have established links with 244 UK universities, 52 further education colleges and over 80 overseas universities. Furthermore, higher education placements totalling 1,499 were offered across 319 arts and cultural organisations in 2011-12.
- We have also found that arts and culture plays a role in improving wellbeing, itself an essential determinant of an individual's productivity. The mechanisms through which these improvements are transmitted include better health and happiness and better employability. Arts activities can improve the health of older adults, lower blood pressure and reduce anxiety in cardiac patients, and shorten hospital stays for inpatients. Many arts and cultural organisations offer programmes to improve the employability of those who have spent time outside the labour force. Imperial War Museum North's *In Touch* programme has had particular success with unemployed and disabled people, while Southbank Centre actively engages younger people.

Investment in arts and culture as a catalyst for economic regeneration

There are many case studies looking at the regeneration effects of arts and culture, their institutions and events. However, they are usually not assessed in any systematic way, meaning that more careful data collection in the future on individual projects in the arts and culture would make it easier to assess their contribution to regeneration. Nevertheless, we have been able to identify some ways in which investment in the arts and culture can drive improvements in local economies. Our findings are as follows:

- Local investment in arts and culture can be expected to vitalise local commercial creative endeavour, helping to rebalance economies that have seen traditional industry decline. For example, during 2008, Liverpool's year as European Capital of Culture, the number of creative businesses there increased by eight per cent. Similar increases were observed in the context of the Turner Contemporary Gallery in Margate and the Newcastle-Gateshead cultural development project.

- Other sectors of the economy also benefit from the spending of visitors to local arts and cultural attractions, sustaining jobs and local businesses.
- Local amenities, including in arts and culture, can be reflected in 'willingness-to-pay' to live in a certain locality which, in turn, is reflected in local house prices. Based on a measure of 'cultural density' developed for this study, which we based on Culture24 data, we find a positive correlation between house prices and cultural density.
- Determining the extent of causality is, however, trickier because the cultural density of a locality is only one of a wide range of factors that can be expected to influence house prices in that locality. But there are statistical techniques to isolate the impact of particular factors on a variable when it is known that other factors influence that variable as well. Through an application of these techniques, we find that being located in an area with twice the average level of cultural density could be associated with an average £26,817 increment on the value of housing.
- Furthermore, evidence from our primary research suggests that the regeneration benefits of investment in arts and culture can be bigger when that arts and cultural investment is related to place. Most of the arts and cultural organisations that we surveyed or interviewed make particular efforts to connect with their local area.

Suggested areas for further research

We have made suggestions, in section 8 of the report, of possible areas for further research. These range from steps that could be taken to enable a robust assessment of the 'business economy' and macroeconomic impacts of museums to producing even more robust estimates of the arts and culture as defined for the purposes of this study. We also suggest further research and measures to facilitate better measurement of the spillover impacts of the arts and culture and to better understand the impact of further public funding cuts.

1 Introduction

This is a report by the Centre for Economics and Business Research (Cebr) on the economic contribution of the arts and culture to the national economy. The report compiles the results of a study on behalf of Arts Council England and the National Museums Directors' Council (NMDC).

1.1 Background and aims of the study

The purpose of the study was to help the Arts Council and NMDC develop a clear and robust account of the contribution that the arts and culture make to the economy at a national level.

Arts Council England is a public body that provides backing for the arts and culture, supporting an array of activities in England, including visual art, reading, dance, music, literature, crafts, collections, theatres, museums, libraries and digital art. This report was commissioned as part of a broader programme of research by the Arts Council directed towards one of its primary strategic goals, ensuring that the arts and culture are sustainable, resilient and innovative.¹

NMDC is an independent organisation representing all national and major regional museums in the UK. NMDC provides a collective voice for museums – as well as the British Library, the National Library of Scotland and the National Archives – and facilitates national discussion of the issues facing the arts and culture, while acting on behalf of the collective priorities of these organisations. For NMDC, the evidence provided by the study was intended to support it in these roles.

Through the distribution of public funding, the Arts Council develops and invests in activities across the arts, museums and libraries sector, with a plan to invest over £2 billion of public and National Lottery money between 2011 and 2015. This is not to mention the further billions invested by English local government in 'culture' and by the Department for Culture, Media & Sport (DCMS), the devolved administrations, Heritage Lottery Fund and the Ministry of Defence in the national museums, libraries and archives. Maximising the returns to these investments requires a clear understanding of how and to what extent the activities in receipt of them contribute to the national economy.

The overall aims of the research were, therefore, to develop a clear, robust and evidence-based understanding of the contribution made by these activities and to gather essential insight into the nature of this contribution.

This report includes not just an analysis of the 'direct' contribution of the arts and culture as measured by macroeconomic indicators like GVA, employment and household incomes, however, but also an examination of the 'indirect' contributions made by the arts and culture to the wider economy and to other sectors. These spillover impacts come, for example, through tourism, improvements in national productivity and through the role of the arts and culture in developing skills, nurturing innovation and fostering growth in the commercial creative industries.

¹ The broader research programme already covers: (i) the economics of cultural activity to understand how the arts, museums and libraries sectors contribute to the economy; and (ii) how this contribution can be appropriately evidenced, including the production of guidance for cultural sector organisations to help them assess and demonstrate their economic contribution as well as research exploring links between publicly funded cultural organisations and the commercial creative sector.

1.2 Scope of the study

The issue of scope was necessarily considered from a number of angles, specifically:

- the economic activities to be considered
- the geographies to be included
- the set of organisations in the arts and culture industry from which to draw our samples for the primary research element of the study

Each is considered in turn.

Economic activities to be considered

The study set out to cover the six art forms – theatre, dance, literature, visual arts, music, combined arts – and museums. The British Library was to be included as an NMDC member because it is comparable to a national museum and not the wider public library sector in this context.²

Libraries as a sector was not to be incorporated in the study because the business models and the ways in which libraries generate spillover effects in the wider economy were deemed to differ to such an extent as to warrant a separate study. The arts industries and museums, on the other hand, were deemed to have sufficient similarities – particularly in respect of how they impact on the economy – to justify grouping them in this research.

Neither was the study to cover creative industries within the remit of the Arts Council, such as film or video games, except to the extent that these sectors benefit through spillover effects from the publicly funded arts and culture.

The next step was to consider the relevant set of activities in the context of industrial classification and national statistics. The Standard Industrial Classification (SIC) system provides the underlying data collection framework for much of the economic data produced by ONS, including the UK ‘business economy’ and national accounting frameworks which, in turn, are the foundation on which the macroeconomic models used to estimate the impact of the arts and culture presented in this report were developed by Cebr. The SIC system classifies goods and services and productive activities into, respectively, ‘product’ and ‘industry’ groups.

For the purposes of ‘business economy’ review in section 2 and the macroeconomic impact analysis in section 3, the scope of the study is a set of productive activities captured by what we have termed **‘the arts and culture industry’**. This ‘industry’ consists of sets and/or subsets – depending on the level of industry aggregation – of the product and industry groups defined under the SIC system. To capture the relevant ones requires close examination at the deepest level of disaggregation, the five-digit level, while accepting that national statistics sometimes do not even reach the four-digit level.

To elucidate the definition of ‘the arts and culture industry’, it is necessary to work through the various levels of disaggregation. The SIC system breaks down the economy into 21 broad sectors (officially ‘Sections’ A to U) at the one-digit level. Section R, for example, is the ‘Arts, Entertainment and Recreation’ sector. However, this includes a range of industry groups at the next (two-digit) level that are not within either the Arts Council or NMDC’s remit, such as gambling and betting and sports

² Specifically, like national museums, it is funded through DCMS. Furthermore, the British Library does some interesting work that was relevant in assessing spillovers such as, for example, the support provided to SMEs through its business centre.

activities. However, Section R does not include a range of activities related to literature and music, two of the six art forms that the study was to cover. For these, we looked to Section J, the 'Information and Communications' sector.

The next level of disaggregation is the two-digit divisions³, the relevant ones being:

- J58 publishing activities;
- J59 motion picture, video & TV programme production, sound recording & music publishing activities;
- R90 creative, arts and entertainment; and
- R91 libraries, archives, museums and other cultural activities.

Clearly, these two-digit industries also include a range of activities that were beyond the desired scope, notably motion picture, video and TV programme production, libraries and other cultural activities (such as heritage sites and buildings, zoos and botanical gardens). Drilling deeper to the three- and four-digit levels brought us closer to the required level of industry disaggregation.

Following consultation with Cebr and internal Arts Council and NMDC discussions, the relevant set of three- and 4-digit activities to include within our definition of the arts and culture industry were decided as:

- J58.11 book publishing
- J59.2 sound recording and music publishing
- R90.01 performing arts
- R90.02 support activities to performing arts
- R90.03 artistic creation
- R90.04 operation of arts facilities
- R91.01 library and archive activities (British Library only)
- R91.02 museum activities

But it was discovered late in the study that museums also would need to be excluded from our 'business economy' and macroeconomic impact analysis. The ONS Annual Business Survey (ABS) only picks up the activities of 500 museums, in contrast to the 2,000 or so that exist in the UK. Not only that, but the ABS reports these 500 museums as making a negative contribution to national income, which was entirely inconsistent with existing industry data. ONS reminded us that only VAT or PAYE registered museums are included in the ABS estimates, but this we deemed unsatisfactory as an explanation for the absence of so many museums and in light of our clients' knowledge of the sector.

This prompted a search of the UK Companies House 'webcheck' facility, which provides basic details on all the companies registered in the UK. This includes information on corporate status and on the

³ This is the level at which data is available from the supply-and-use tables, showing and reconciling how these industries contribute to UK GDP under each of the three methods used to calculate it (the production approach, the income approach and the expenditure approach).

SIC classifications to which their activities are assigned. We reviewed all NMDC members but information for only a sample was available from 'webcheck' (20 out of 36 museum members). The facility revealed that:

- Several museums had two or more registered companies associated with them, most had a 'trust' or 'foundation' company and one or more trading companies.
- Museum trust or foundation companies were often classified as 91.02: museum activities, but several others were classified elsewhere in the two-digit division 91, specifically as 91.01: library and archive activities, 91.03: operation of historical site or buildings and similar visitor attractions or 91.04: botanical and zoological gardens and nature reserve activities. One was even classified as 90.04: operation of arts facilities.
- Very few of the museums that had classified their trust or foundation companies in 91.02 or the other codes above had also classified their subsidiary trading companies in the same code.
- Subsidiary trading companies were generally classified elsewhere entirely, specifically, in 47: retail, 56: food and beverage services, 58: publishing activities, 74: other professional, scientific and technical activities, 82: office administrative, office support and other business support activities and 85: education.

What became clear was that much of the value being generated by museums is not captured within the ABS estimates for the 91.02 museum activities code. We had assumed that most of the ancillary activities of museums would not exist without the museums themselves, in which case these activities would justifiably have been classified with the code representing their 'principal' activity. Museums have for the most part, however, established their ancillary activities as separate trading companies that are then classified according to their principal activity, which is ancillary to museums.

This was an unexpected discovery but appears to be the most plausible explanation for the absence of so many museums and for the reported negative contribution to national income. Many of the value-adding activities of museums are instead captured in the estimates for completely different industries like retail, publishing, catering and education.

Had we known this at the beginning of our study though, it would still not have been possible to undertake the research required to develop robust estimates of the 'business economy' and 'macro' impacts of museums for inclusion in this report. For this reason, the steps necessary to develop such estimates are examined in section 8 on our thoughts for further research.

As it was impossible to include either museums or the British Library in our definition of the arts and culture industry, the definition was narrowed further to the following set of three- to four-digit activities:

- J58.11 book publishing
- J59.2 sound recording and music publishing
- R90.01 performing arts
- R90.02 support activities to performing arts
- R90.03 artistic creation
- R90.04 operation of arts facilities

The final tabular form definition of the arts and culture industry used in this study is provided in **Appendix I**. This traces the definition from the relevant SIC one-digit broader sector classifications through to the relevant five-digit activities.

The analysis of the spillover impacts of the arts and culture in sections 4 to 7 does not hinge on this rigid definition. Museums and the British Library, which provided important contributions to the primary research carried out as part of this study, are given due consideration in these later sections of the report.

Note that the definition is neutral of the spheres of influence or areas of responsibility of either the Arts Council or NMDC. For instance, 58.11 and 59.2 capture all of book publishing, sound recording and music publishing, activities in which the Arts Council's role is relatively limited when compared with the activities captured within 90.01 to 90.04.

Geographic scope

For the analysis of 'the arts and culture industry' in sections 2 and 3 of this report, the study covers England. This is in recognition of the reach of the Arts Council in respect of the six art forms. The analysis of museums in the context of the spillover impacts of the arts and culture can be considered as covering the whole of the UK. This is because NMDC's membership includes national and regional museums from the UK nations other than England as well as those from England itself.

Estimates of the 'business economy' and 'macro' impacts of the arts and culture industry are also presented for each of the English Government Office regions, while assessment of the various spillover impacts necessitates analysis of the arts and culture at deeper local levels.

Primary data gathering

The study included a primary data gathering phase, the results of which have been employed in quantifying the contribution of the arts and culture to the economy. There were two phases including an online survey of the Arts Council's National Portfolio Organisations (NPOs⁴) and NMDC's member museums and a programme of in-depth interviews with nine NPOs and four NMDC members.

The inclusion of NMDC museum members meant we could open this phase of the research to the national museums, which do not fall within the Arts Council's sphere of influence.

The lists of organisations that contributed to the survey and the in-depth interview programme are listed in **Appendix II**.

1.3 Overview of approach and methodology

The study employed a combination of desk and primary research. Quantitative data drawn from these sources, and from the ONS, were used to provide the 'business economy' review and the macroeconomic impact assessment of the arts and culture industry featured in sections 2 and 3. The more qualitative intelligence gleaned from our secondary research and from the survey responses and in-depth interviews were used in the four sections on spillovers (sections 4 to 7).

⁴ These were still referred to as Regularly Funded Organisations in the period for which the latest data are available. This reflected the name of RFO funding programme that preceded the current National Portfolio Organisations programme.

The analysis of the 'business economy' and macroeconomic impacts of the arts and culture industry draws upon official data provided by the ONS. The ABS discloses economic indicators, including revenues, costs of production, and value-added, across hundreds of disaggregated industries. These are broken down according to the Standard Industrial Classification (SIC) framework which, as noted above, provides the underlying data collection framework for much of the economic data produced by ONS, including the ABS and the national accounting framework. By identifying the activities within the SIC framework that constitute arts and cultural activities and using the corresponding figures for these activities from these datasets, we are able to measure, at a national level, the economic characteristics of the arts and culture industry and its direct macroeconomic impacts upon the economy.

The multiplier impacts of the arts and culture industry were estimated using Cebr's input-output models. These draw on the ONS national accounting framework as reflected in the supply-use dataset, which provides the most comprehensive official account of the existing structure of the UK economy, detailing the economic relationships between UK businesses, households, government and the rest of the world. We use these input-output models to determine the sectors from which the arts and culture industry purchases its inputs, tracing the industry's economic footprint through its supply chain relationships with other sectors, generating output and employment in those sectors and increasing earnings and employee spending in the wider economy.

This approach is consistent with the methods used by ONS when it produces industry-level multiplier estimates, the last time being 2005. While these methods are not inconsistent with official HM Treasury guidance, as articulated in the *Green Book*, they serve very different purposes. The *Green Book* provides guidance on producing economic impact assessments (EIA), which are concerned with measuring **changes in the economic landscape** as a result of a new organisation, event or investment. This guidance in turn provides the foundation for the Arts Council's guidelines on measuring local economic impacts of arts and cultural investments or projects, which advocate the need to capture the impacts that are 'additional', such as the additional spending of visitors attracted by the new investment or project over and above the spending of visitors that would have been attracted to the area without the investment or project.

This is distinct from the macroeconomic impact assessment undertaken for this study, which is based on the arts and culture industry as it exists today. This type of assessment, in other words, **takes the existing economic landscape as given** and measures the impacts of the arts and culture industry on that basis. The concept of 'additionality' in this context would be concerned with the impacts that are additional as a result of the existence of the arts and culture industry and that would not have been generated elsewhere in the absence of the industry. However, the fact is that the arts and culture industry, like all other industries for which data are reported by ONS, does exist and does have impacts in its current form. These impacts are what this study sought to measure.

Data that would be useful in quantifying the value of spillovers from the arts and culture to the wider economy are much sparser. For that reason, the results and conclusions of the later sections are based much less on systematic modelling using national statistics and much more on a mixture of the qualitative intelligence gleaned from secondary research, from our primary research (consisting of responses to a survey and a more limited set of in-depth interviews) and from whatever quantitative data we could glean from them or from sources suggested by them. We used deductive and econometric techniques to examine certain specific spillover benefits. These sections cover all six art forms and also museums.

1.4 Structure of this report

The report that follows is structured in the following manner:

- Section 2 provides an assessment of the importance of the arts and culture to the UK economy in terms of employment, turnover and value added contributions. Data used for this section is entirely based on those provided by enterprises. For this reason, the section is called a 'business economy' review.
- Section 3 sets out our findings on the macroeconomic contributions, including indirect and induced multiplier impacts of the arts and culture industry. The section outlines the estimated contributions to GDP, GVA and 'industrial' output at basic prices from the national accounting data, employment and household incomes at the UK and England level, before examining the impacts across the other UK nations and English regions.
- Section 4 presents our analysis of the spillover impacts of the arts and culture through inbound tourism from overseas.
- Section 5 examines the role of the arts and culture in supporting commercial creative industries, drawing on a variety of data sources. Specifically, we use existing research and support this with case studies drawn from the survey and in-depth interviews carried out as part of this study.
- Section 6 assesses how the arts and culture support productivity in the workforce through education, employability and general wellbeing.
- Section 7 examines the role of investment in the arts and culture as a catalyst for economic regeneration.
- The appendices cover a range of issues as follows:
 - Appendix I provides the SIC-based definition of the arts and culture industry used in this study in tabular form
 - Appendix II provides lists of the contributors to Cebr's primary research exercises
 - Appendix III details some technical issues related to the approach and methodology used in the study
 - Appendix IV provides the list of questions posed to participants of Cebr's survey
 - Appendix V provides the more detailed results of our linear regression analysis of the impact of cultural density on regional house price trends, in support of Section 7

2 'Business economy' review of the arts and culture

This section provides an assessment of the importance of the arts and culture to the UK economy in terms of employment, turnover and value added contributions. We examine the performance of these indicators for the most part over the period 2008-2011. The analysis also covers some of the other characteristics of the industry, such as market structure, public funding and employee earnings.

Data used for this section is entirely based on those provided by enterprises, either to the Arts Council (in the case of funding) or to the ONS (in the case of all other indicators).⁵ For this reason, the section is called a 'business economy' review. The relevant ONS datasets include the Annual Business Survey (ABS), the Business Register and Employment Survey (BRES), and the Annual Survey of Hours and Earnings (ASHE).

2.1 Turnover

Here we examine the contribution of the arts and culture to the UK economy in terms of the turnover generated by the enterprises that are assigned by ONS to the industry classifications that fall within our definition of the arts and culture industry. Turnover is defined as revenues generated by businesses as a result of undertaking productive value-adding activities. Subsidies and donations received by the arts and culture industry are transfers of value that has been generated elsewhere and are thus not included.⁶

Enterprises are classified in the SIC framework according to their principal activity, meaning that the turnover and value added (see subsection 2.2 below) that they generate, the persons they employ, and the values of all other variables is also classified under the same principal activity or industry.

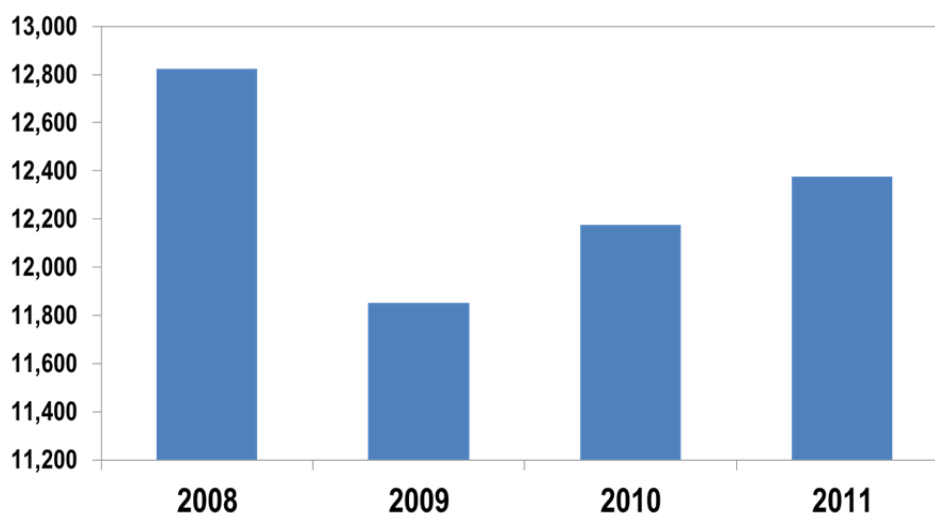
The ABS provides this raw 'business economy' data on turnover and value added at the SIC three- and four-digit level, which enabled isolation of these data for the set of productive activities listed in section 1.2 that fall within the definition of the arts and culture industry. However, these data are not presented in a geographically disaggregated form, meaning that the analysis in this section covers the arts and culture industry at the UK level only.

Figure 1 illustrates that the arts and culture industry generated £12.8 billion in turnover in 2008, before falling by around £1 billion in the recession year of 2009, when total turnover amounted to £11.9 billion. Subsequently, turnover recovered by 4.4 per cent over the years 2009-11, to reach a total of £12.4 billion in 2011. But this is still some 3.5 per cent below its 2008 level.

⁵ There are a number of exceptions, notably, the DCMS and local government funding data used in the public funding analysis and the Family Spending survey data presented in subsection 2.6, which analyses trends in consumer expenditure on the arts and culture.

⁶ Subsidies are the result of taxes on products, economic activities and value throughout the economy that are collected by government and redistributed through public spending. Donations are the result of, among other things, wealth that has been accumulated by its holders through the productive economic activities that they undertake.

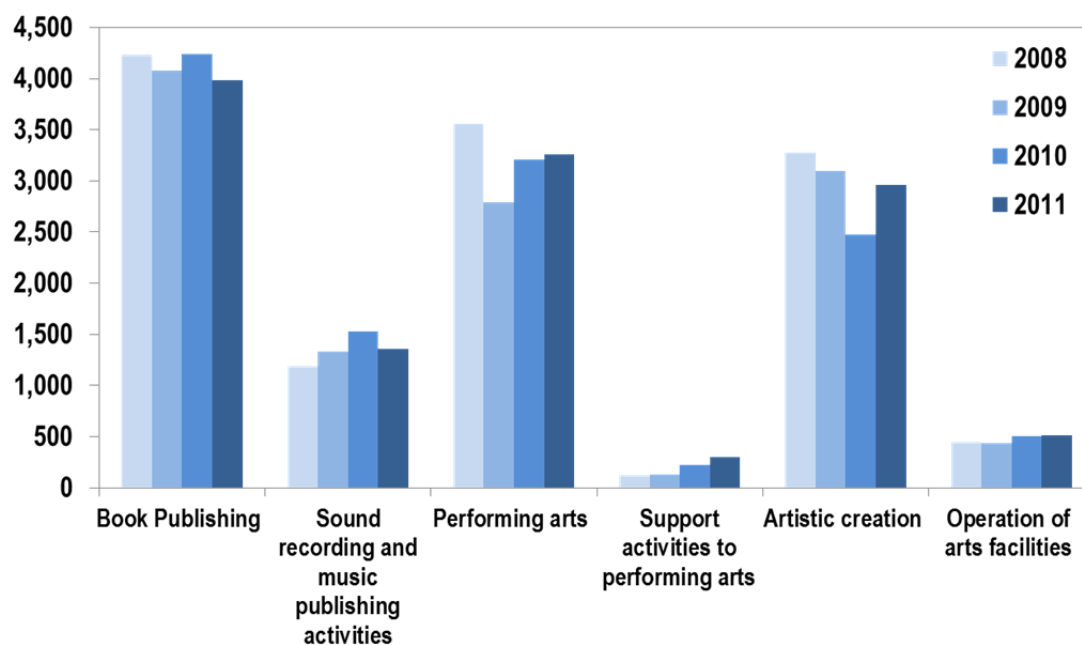
Figure 1: Turnover generated by the arts and culture enterprises in the UK, 2008-11, £m current prices



Source: ONS Annual Business Survey 2008-11, Cebr analysis

Figure 2 shows disaggregated estimates for each of the three- and four-digit activities that constitute the arts and culture industry as we have defined it.

Figure 2: Turnover in the arts and culture by SIC three- and four-digit productive activity, 2008-11, £m current prices



Source: ONS Annual Business Survey 2008-11, Cebr analysis

Book publishing, performing arts and artistic creation are the three largest sets of productive activities, accounting respectively for an average of 34 per cent, 26 per cent and 24 per cent of the arts and culture industry's turnover over the 2008-11 period. While support activities to performing

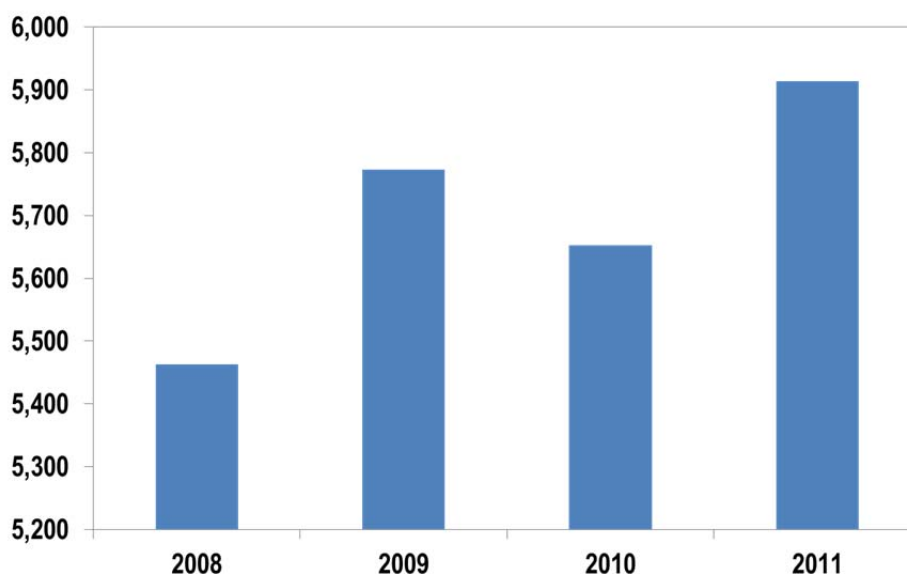
arts represent the smallest share of the sector's turnover, it has seen the greatest revenue growth over the period of analysis, with its turnover in 2011 having increased by over 140 per cent relative to 2008.

2.2 Gross value added

This section examines the economic contribution of the arts and culture industry in terms of what the Annual Business Survey calls its measure of 'approximate gross value added at basic prices'. GVA or gross value added is a measure of the value from production in the national accounts and can be thought of as the value of 'industrial' output less the value of the inputs used to produce that output.^{7,8}

Figure 3 illustrates that the GVA contribution of the arts and culture industry amounted to £5.5 billion in 2008. This actually jumped in the recession year of 2009 by 5.7 per cent to nearly £5.8 billion. Therefore, as UK GDP fell by four per cent, the arts and culture industry appears to have fared strongly in the tough economic climate. GVA fell by 2.1 per cent in 2010, but this was followed by a robust rise in 2011, when a 4.6 per cent increase saw the arts and culture industry's GVA total over £5.9 billion.

Figure 3: Approximate gross value added at basic prices of the enterprises classified within our definition of the arts and culture industry, 2008-11, £m current prices



Source: ONS Annual Business Survey 2008-11, Cebr analysis

⁷ That is, the value of what is produced less the value of the intermediate goods and services used as inputs to produce it. GVA is also commonly known as income from production and is distributed in three directions – to employees, to shareholders and to government. GVA is linked as a measurement to GDP – both being a measure of economic output. That relationship is (GVA + Taxes on products - Subsidies on products = GDP). Because taxes and subsidies on individual product categories are only available at the whole economy level (rather than at the sectoral or regional level), GVA tends to be used for measuring things like gross regional domestic product and other measures of economic output of entities that are smaller than the whole economy.

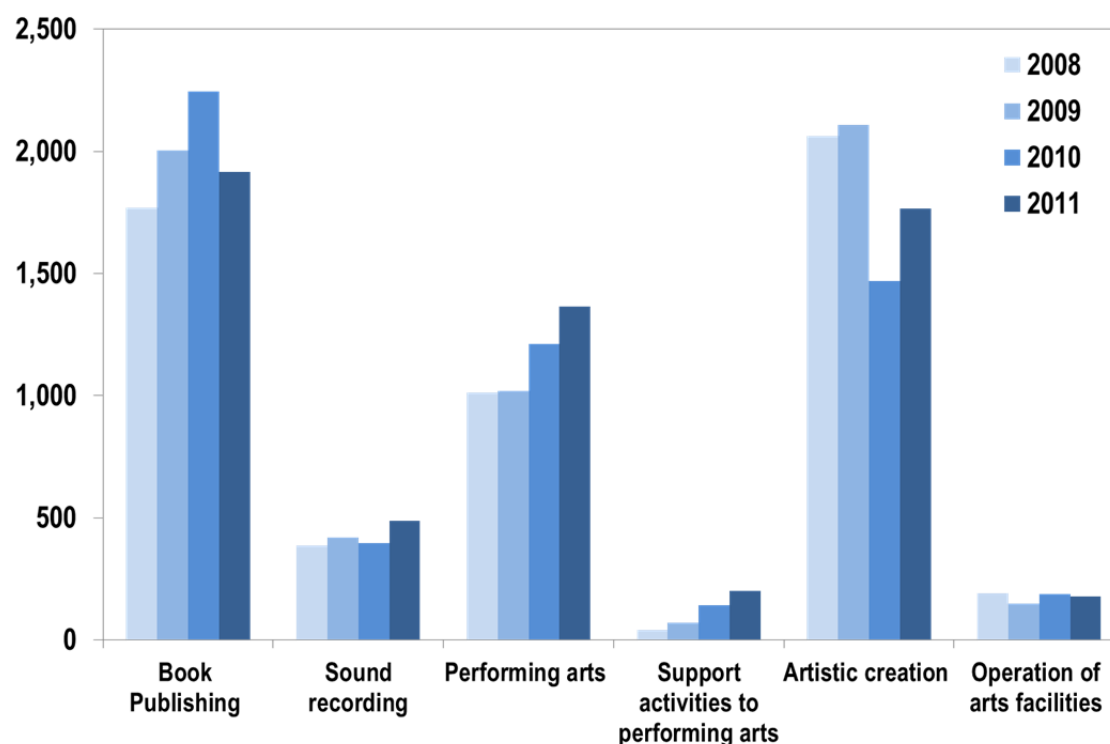
⁸ See Appendix III for an explanation of the concepts of 'industrial' output and basic prices in the context of this section and section 3 on the macroeconomic impacts of the arts and culture.

The fact that the industry's GVA increased in 2009 is in contrast to the observed fall in turnover in that year (see Figure 1). Closer analysis of the ABS data revealed that, although turnover fell by 7.6 per cent, the industry's total purchases of goods and services (that is, inputs) dropped by 16.3 per cent.

The arts and culture industry, which saw its revenues significantly suppressed in the midst of a recession, has clearly therefore been successful in drastically reducing its outlays. This has resulted in the seemingly counter-cyclical GVA trend observed in Figure 3, meaning that the enterprises that are classified within our definition of the arts and culture industry have collectively increased their contribution to UK GDP even as the wider economy contracted.

The level of detail provided in the ABS allowed us to establish, as with turnover, the GVA contributions made by the individual three- and four-digit activities that constitute the arts and culture industry. These are shown for each year of the period 2008-2011 in Figure 4.

Figure 4: Approximate gross value added at basic prices in the arts and culture by SIC three- and four-digit productive activity, 2008-11, £m current prices

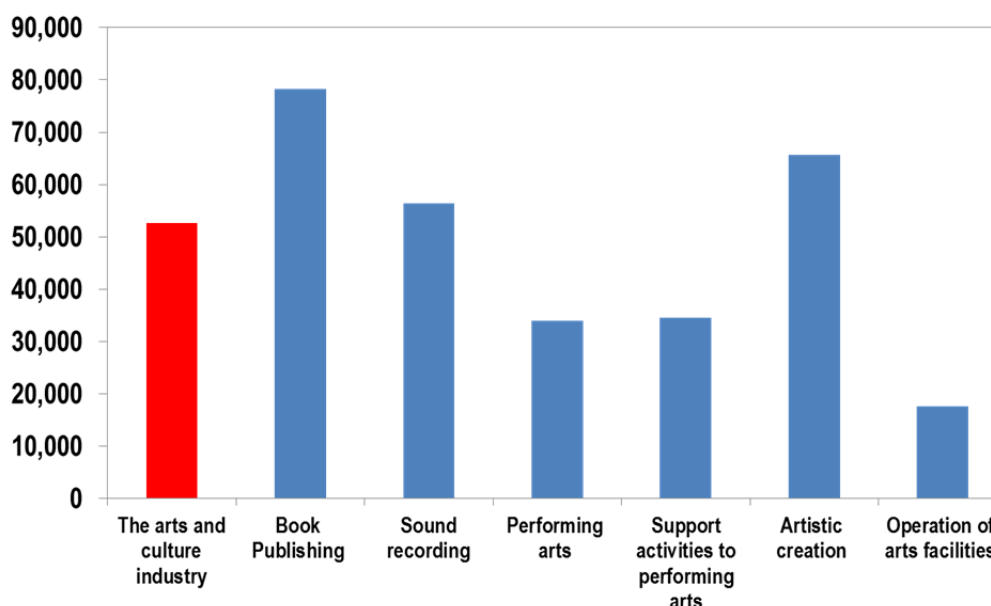


Source: ONS Annual Business Survey 2008-11, Cebr analysis

Over these four years, the largest GVA contributions were provided by book publishing (accounting for 34.8 per cent of the arts and culture industry's aggregate GVA), followed by artistic creation (with 32.5 per cent). These figures indicate that book publishers have fared comparatively well over the 2008-2011 period, usurping artistic creation as the largest contributor to the industry's GVA in 2010. The strongest overall growth was experienced by support activities to performing arts, which saw its GVA increase by a staggering 400 per cent in the years 2008-11.

We used these GVA contributions in combination with ABS employment data to produce estimates of the labour productivity of the arts and culture industry as a whole as well as of the individual subsets of productive activities that fall within our industry definition. These are illustrated in Figure 5 below.

Figure 5: Labour productivity measured in terms of GVA per FTE in the arts and culture industry and in each of the subsets of productive activities that make up that definition, average 2008-2011, £ current prices



Source: ONS Annual Business Survey 2008-11, Cebr analysis

This shows that GVA per FTE in the arts and culture industry averaged £52,600 over the period 2008-2011. This is marginally lower than the equivalent figure for the UK economy as a whole, which was £54,300 in 2010.

However, significant segments of the arts and culture industry have very high productivity. For example, GVA per FTE in book publishing averaged £78,200, while the equivalent figures for artistic creation and sound recording were £65,700 and £56,300, respectively. This indicates that many workers in the arts and culture industry produce value at a high rate, while drawing on comparatively few resources as inputs.

2.3 Employment

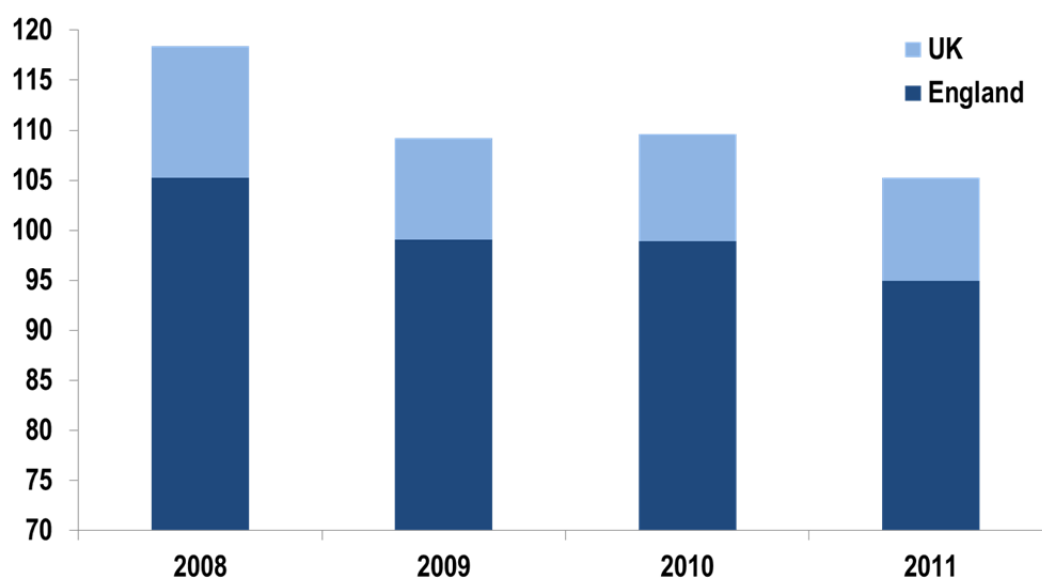
The arts and culture industry was responsible for the employment of an estimated 110,600 full-time equivalents (FTEs) in the UK and 99,500 FTEs in England on average over the period 2008-2011.⁹ This represents around 0.45 per cent of total UK employment and 0.48 per cent of total employment in England.

⁹ Cebr estimates based on the ONS Business Register and Employment Survey 2008-2011.

The economic performance of the arts and culture industry, when viewed from the perspective of these employment data (illustrated in Figure 6 below on an annual basis), appears more consistent with the broader economic environment. These data were sourced from the Business Register and Employment Survey (BRES), which are also presented in a geographically disaggregated form. This section includes, therefore, data broken down by the arts and culture productive activity subsets as well as by GB nation and English region for the industry as a whole.

Between 2008 and 2009, Figure 6 shows that employment fell by approximately 7.7 per cent in the UK and by 5.9 per cent in England. Having remained broadly stable in 2010, further falls in employment were observed in 2011, with employment in the arts and culture industry currently standing at 89 and 90 per cent of their 2008 levels in the UK and England, respectively.

Figure 6: Employment in the arts and culture industry, FTEs (thousands)



Source: ONS Business Register and Employment Survey 2008-11, Cebr analysis

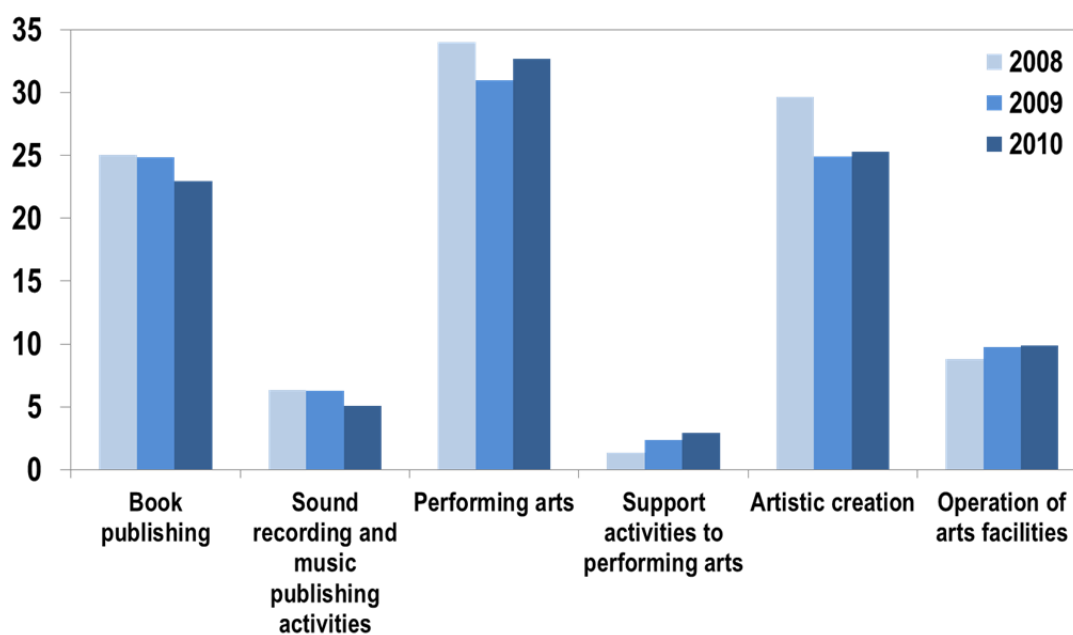
Figure 7 below illustrates the dynamics behind these changes in the arts and culture industry's total employment by examining employment at the level of the subsets of SIC three- and four-digit productive activities that fall within our definition.

Performing arts, which includes the activities of actors, circuses, dancers and theatre among others,¹⁰ is by far the largest contributor to employment in the arts and culture industry, responsible for 33.1 per cent of employment, or approximately 32,700 thousand FTEs in England in 2010.

Artistic creation is the next largest activity by employment and includes the activity of artwork restoration, playwrights, poets, and sculptors, among others. This activity was responsible for approximately 25.6 per cent of employment in the arts and culture industry in England in 2010, equivalent to 25,300 FTE jobs.

Book publishing supported 23.2 per cent of employment in the arts and culture in 2010, equivalent to 23,000 FTEs in England.

¹⁰ See Appendix I for a complete breakdown of the activities included.

Figure 7: Arts and Culture employment by activity in England¹¹, FTE thousands

Source: ONS Business Register and Employment Survey 2008-2010¹², Cebr analysis

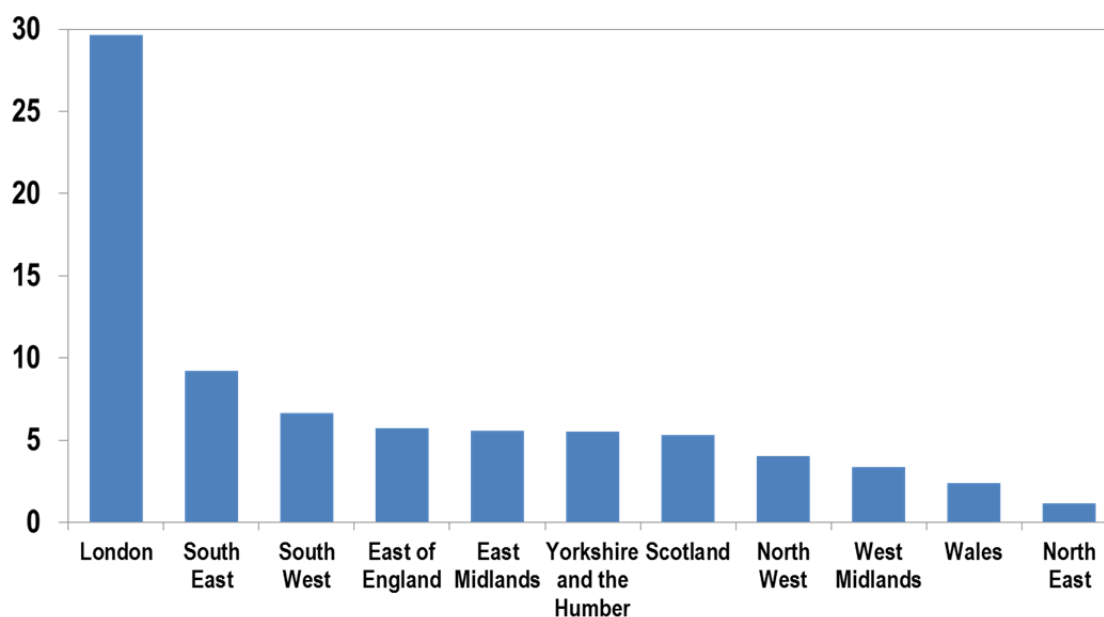
The smallest activity by employment size is associated with support activities to the performing arts, which includes the activities of directors, set designers and lighting engineers, for instance. This activity is responsible for three per cent of employment in the arts and culture in England, or 2,900 FTEs. While these activities are the smallest contributor in terms of overall employment contribution to the industry, it is the only activity subset to have seen employment rise continually between 2008 and 2010.

Regional employment in the arts and culture industry is estimated to follow a broadly similar pattern to that of England and the UK. This is illustrated in Figure 8 below.

¹¹ Employment in Museum activities is shown for both the UK and England

¹² The data at this level of industrial disaggregation and at the level of geographical disaggregation in the regional analysis below is only available to 2010.

Figure 8: Regional and country-level employment in the arts and culture¹³, average over 2008-10, FTEs thousands



Source: ONS Business Register and Employment Survey 2008-2010, Cebr analysis

Employment in the arts and culture is estimated to be highest in London, the South East and the South West of England. Following these, many of the UK's regions are estimated to have broadly comparable levels of employment in the arts and culture. The East of England, East Midlands, Yorkshire and the Humber and Scotland all accounted for between 5,000-6,000 FTEs in the arts and culture.

Volunteers, as well as those in paid employment supported by the arts and culture, play a key role in facilitating the operation of the industry. Based on responses to the survey of regularly funded organisations (RFOs) that was part of this study, we estimate that for every one FTE position in the arts and culture industry, a further 2.5 volunteer FTE positions are created. This suggests that the arts and culture as a whole is supported by up to 230,000 volunteers in England.¹⁴

2.4 The market structure of the arts and culture industry

The SIC-based industry 'groups' (broad sets of productive activities) from which our definition of the arts and culture industry is drawn is populated by a large number of small enterprises, while larger

¹³ The employment data shown here represent employment in the two-digit industry R90: Creative, Arts and Entertainment activities, due to data restrictions at the regional level. These data exclude other activities that are within the scope of our industry definition, namely music recording and book publishing.

¹⁴ This is based on the assumption that regularly funded arts and culture organisations make similar use of volunteers to non-regularly funded organisations. The expectation would be, however, that publicly-funded arts and culture organisations would make more use of volunteers than commercial arts and culture organisations. We note also that the *Taking Part* survey suggests that over 800,000 people in England claim to have done some volunteer work in the arts in the past year. This is significantly higher than our estimate, probably because it is likely to include people acting as trustees of sitting on committees or helping out at one-off arts events that are not necessarily linked to particular arts and cultural organisations. Choir performances might be a good example of the latter.

organisations typically comprise a relatively small proportion of total enterprises. Table 1 illustrates the market structure of the broad industries from which the arts and culture industry as defined for this study is drawn, showing the numbers of enterprises in different employment size bands.¹⁵

Table 1: Market structure of the broader industry groups from which the arts and culture industry is drawn, enterprise size by employment in the UK

Employment size bands	SIC J58: Publishing activities		SIC J59: Motion picture, video and television programme production, sound recording and music publishing activities		SIC R90: Creative, arts and entertainment activities	
	# of firms	% of firms	# of firms	% of firms	# of firms	% of firms
With zero employees	29,555	84.86	45,760	90.16	105,375	93.09
1	190	0.55	255	0.50	1,465	1.29
2-4	2,840	8.15	3,175	6.26	4,605	4.07
5-9	1,040	2.99	730	1.44	1,090	0.96
10-19	540	1.55	420	0.83	405	0.36
20-49	390	1.12	250	0.49	160	0.14
50-99	130	0.37	85	0.17	55	0.05
100-199	55	0.16	40	0.08	25	0.02
200-249	10	0.03	5	0.01	0	0.00
250-499	30	0.09	20	0.04	10	0.01
500 or more	50	0.14	15	0.03	5	0.00

Source: Department for Business Innovation and Skills¹⁶, Cebr analysis

Firms with one or no employees make up between 90 and 94 per cent of businesses operating within the arts and culture industry. This contrasts with firms employing 250 or more employees, which accounted for less than 0.1 per cent of enterprises in 2011. The proportional share of smaller enterprises is much higher than in the wider economy, in which firms with one or no employees typically account for only around 80 per cent of businesses. Education is the only sector with a comparably high proportion of firms of this size, at approximately 93 per cent.

The structure of that part of the arts and culture industry which is publicly-funded in England is slightly different to that of the wider two-digit creative, arts and entertainment industry group (R90).¹⁷ Table 2 shows that only 3.4 per cent of organisations in receipt of Arts Council funding

¹⁵ The data in this table are at the SIC two-digit level of disaggregation, which was the deepest level at which these data were available. Therefore, these data include activities that are beyond the scope of our definition of the arts and culture industry.

¹⁶ Adapted from the Business Population Estimates 2011 dataset.

¹⁷ This is the broad industry group into which most regularly funded organisations in the arts and culture industry would be expected to be classified under the SIC system.

through the National Portfolio Organisations (NPO¹⁸) programme have no employees, compared with 93.1 per cent in the creative arts and entertainment activities industry. This reflects the much higher proportion of self-employed and freelance operators in the wider industry group, which are less likely to receive regular funding of this nature.

Table 2: Market structure of arts and cultural organisations in receipt of Arts Council funding

Employment size bands	Enterprises	
	# of firms	% of firms
All enterprises	792	100.0
All employers	765	96.6
With zero employees	27	3.4
1 employee	33	4.2
2-4	224	28.3
5-9	205	25.9
10-19	112	14.1
20-49	105	13.3
50-99	45	5.7
100-199	19	2.4
200-249	4	0.5
250-499	4	0.5
500 or more	3	0.4

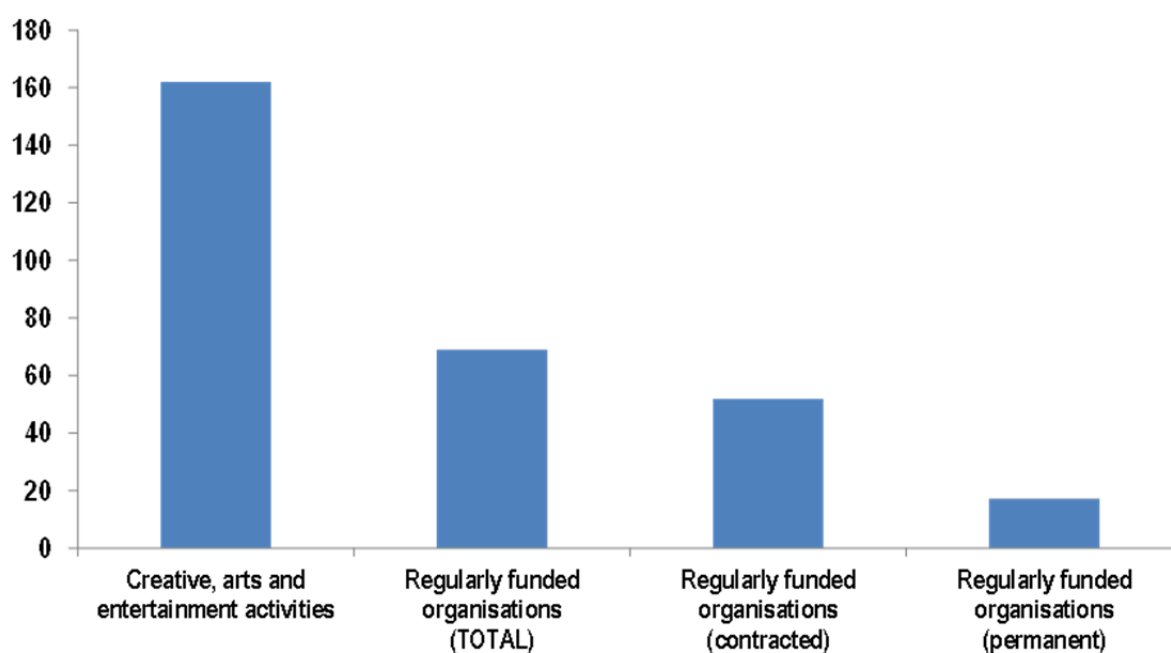
Source: Arts Council England, Cebr analysis

Note, however, that organisations funded by Arts Council England represent a significant proportion of total employment in the creative arts and entertainment industry group (R90). As illustrated in Figure 9 below, they support the employment of 69,000 people, representing 43 per cent of the 162,000 people employed in the industry group as a whole. This number can be expected to have declined in 2012-13 as funding cuts have led to a reduction in the number of organisations that are in receipt of regular Arts Council funding.¹⁹

¹⁸ See subsection 2.7 below.

¹⁹ Detailed data for 2012-13 will be published by Arts Council England in October 2013, as part of the Annual Submission official statistics release.

Figure 9: Employment in Arts Council-funded organisations and in the creative arts and entertainment industry group, 2011-12 thousands

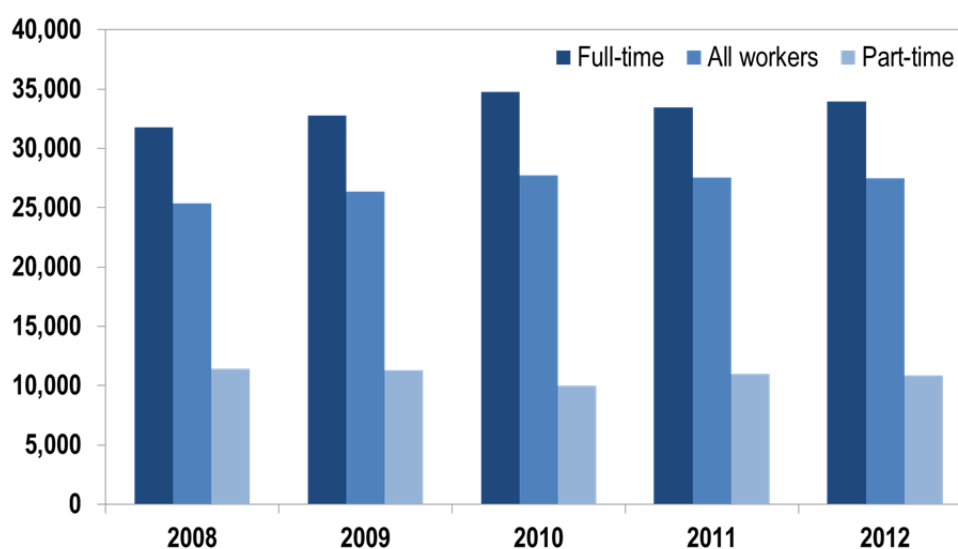


Source: Department for Business, Innovation and Skills and Arts Council England, Cebr analysis

2.5 The structure of incomes from employment in the arts and culture industry

Average full-time gross pay in R90 in 2012 was £33,958, with part-time gross pay reaching £10,837. There has been a divergence in the growth of earnings between full-time and part-time employees over the period 2008-2012. Full-time earnings increased by 6.8 per cent over those five years, during which time part-time earnings fell by 5.3 per cent. This is illustrated in Figure 10 below.

Figure 10: Comparison between UK full-time and part-time earnings in SIC R90: creative, arts and entertainment activities, £

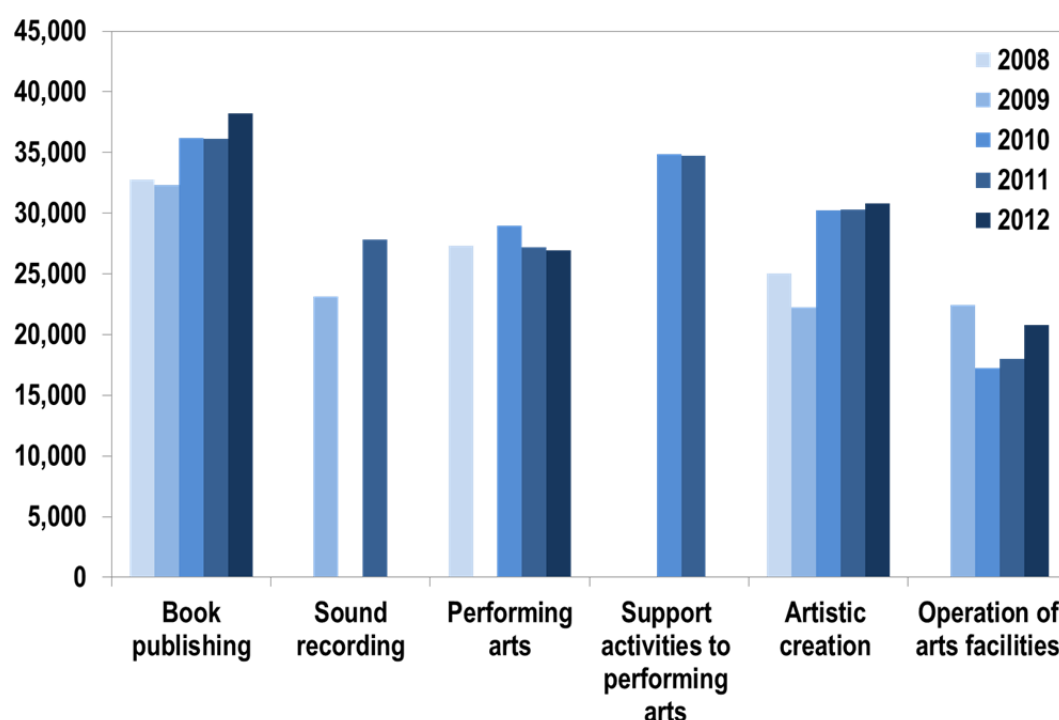


Source: ONS Annual Survey of Hours and Earnings, Cebr analysis

There was also significant variation in earnings trends across the seven SIC three- and four-digit categories of activities included in our definition of the arts and culture industry, as illustrated in Figure 11 below. This illustrates that, workers in the SIC J58.11: book publishing and R90.02: support activities to performing arts, which includes people employed as set designers and directors, experienced the highest levels of average gross pay of any of the four-digit activities within our definition of the arts and culture industry.

Divergent trends are also observed within the four-digit activities. Over the period 2008-2012, average gross pay in R90.03: artistic creation increased 23.2 per cent, while average gross pay in J58.11: book publishing rose by 16.6 per cent in the same period. Meanwhile, average gross pay in R90.01: performing arts fell by 1.4 per cent, as gross pay in R90.04: operation of arts facilities fell by 7.4 per cent over the period 2009-2012.²⁰

Figure 11: Gross annual pay in the seven three- and four-digit subsets of productive activities included in definition of the arts and culture industry, 2008-2012, £²¹



Source: ONS Annual Survey of Hours and Earnings, Cebr analysis. Note: missing columns represent data not disclosed in ASHE survey

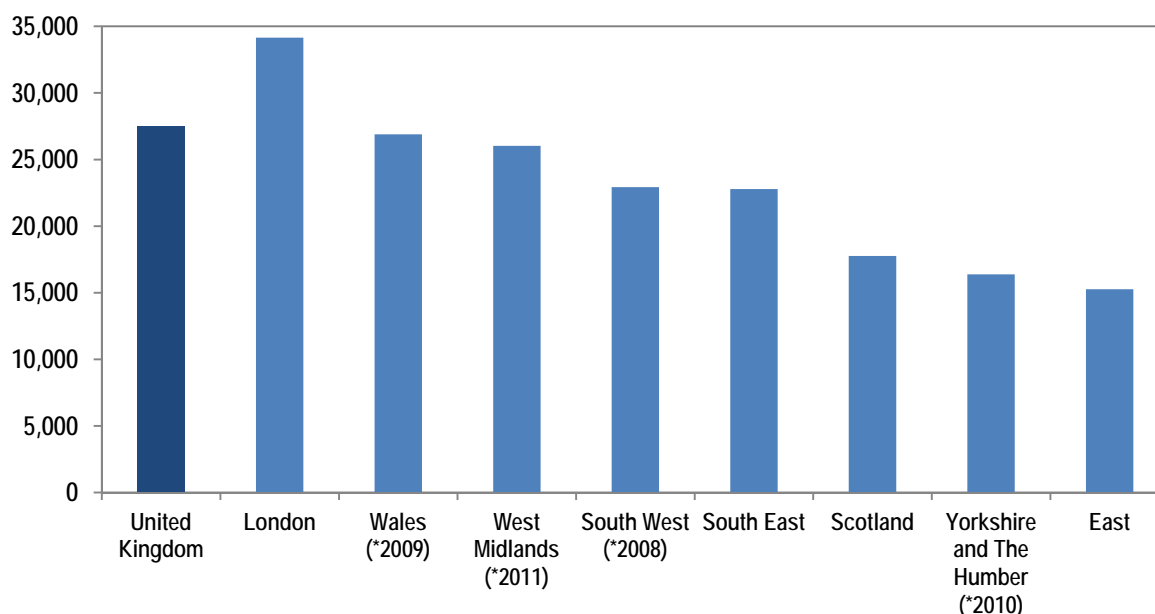
The geographical distribution of earnings in the arts and culture industry also reveals divergences in levels of pay across the different regions of England and the UK. While earnings data are not available at the SIC three- and four-digit level on a regional basis, Figure 12 provides regional earnings data at the two-digit level for R90.

²⁰ These are nominal growth rates and those that appear high suggest that wages paid by the businesses in the particular four-digit category have kept pace with inflation. Wages in those categories that have grown by only small amounts in nominal terms will have fallen quite significantly in real terms.

²¹ Note that the data presented here reflect average earnings across full-time and part-time workers and are comparable with the data for all workers presented in Figure 10.

While the non-availability of data for all regions in all years makes direct comparisons less plausible, the charts below usefully illustrate relative levels of gross annual pay. Employees in the creative, arts and entertainment industry (R90) in London have achieved the highest levels of gross annual pay, receiving £34,100 on average in 2012. While this is the only region in which we observed a higher level of annual pay than the UK average, given that several regional figures above are less timely, it is not unreasonable to expect that average levels of pay will have increased in these regions since the most recent data were disclosed.

Figure 12: Regional breakdown of gross annual pay in R90: creative, arts and entertainment, 2012 (unless otherwise stated), £



Source: ONS Annual Survey of Hours and Earnings, Cebr analysis.

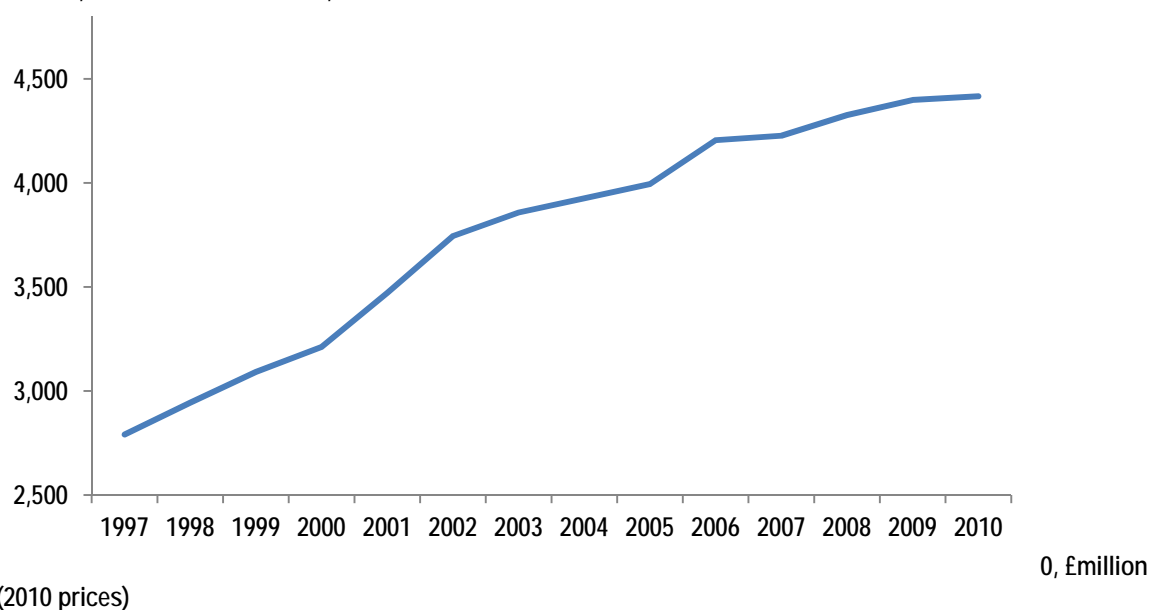
2.6 Consumer expenditure on the arts and culture

There was a steady increase in household consumption expenditure on the arts and culture in the 10 years to 2010, as suggested by the trends presented in Figure 13 below for the broader industry groups.²² Consumption of the goods and services provided by the creative, arts and entertainment industry (R90) increased in real terms by 37.5 per cent, rising from £3.2 billion to £4.4 billion.

We can gain some understanding of the characteristics of consumers of the arts and culture by consulting the Family Spending data compiled by the ONS, which provides spending patterns of UK households of different ages and income brackets on different expenditure categories. One of these categories is 'recreation and culture' and a breakdown of spend on this category by household income levels and age profile is presented in Figure 14 below.

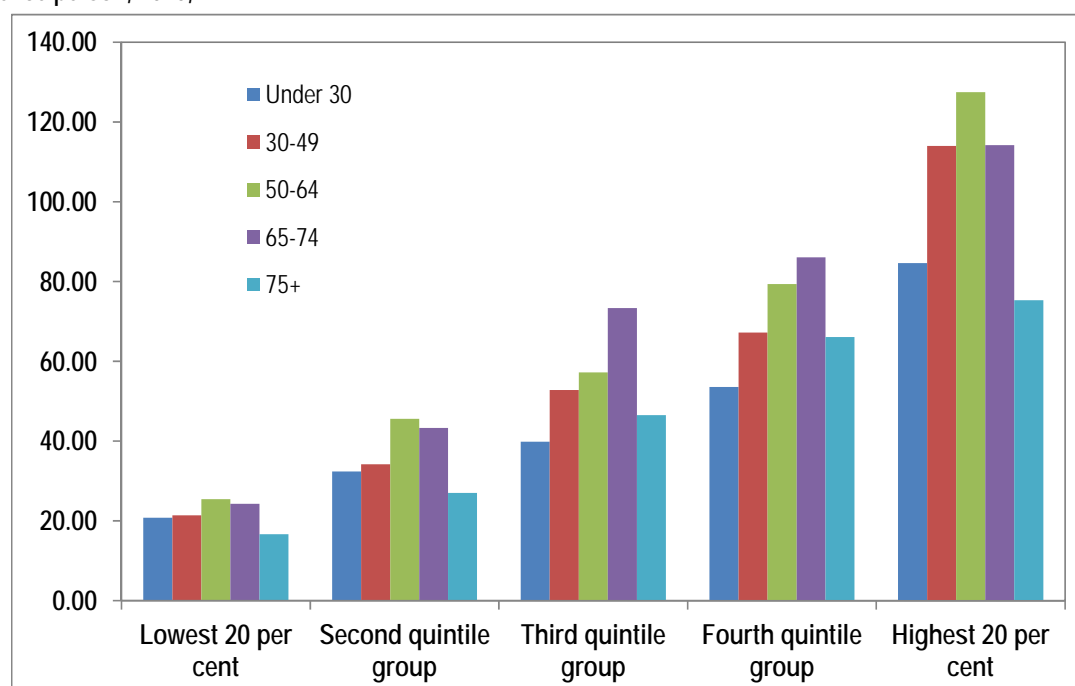
²² Like subsection 2.4 on market structure and the regional incomes from employment data in subsection 2.5, the SIC two-digit level was the deepest industrial disaggregation for the data presented in this section.

Figure 13: UK households' final consumption expenditure on goods and services in the product group R90: creative, arts and entertainment, 1997-201



Source: ONS supply-use tables, 1997-2010

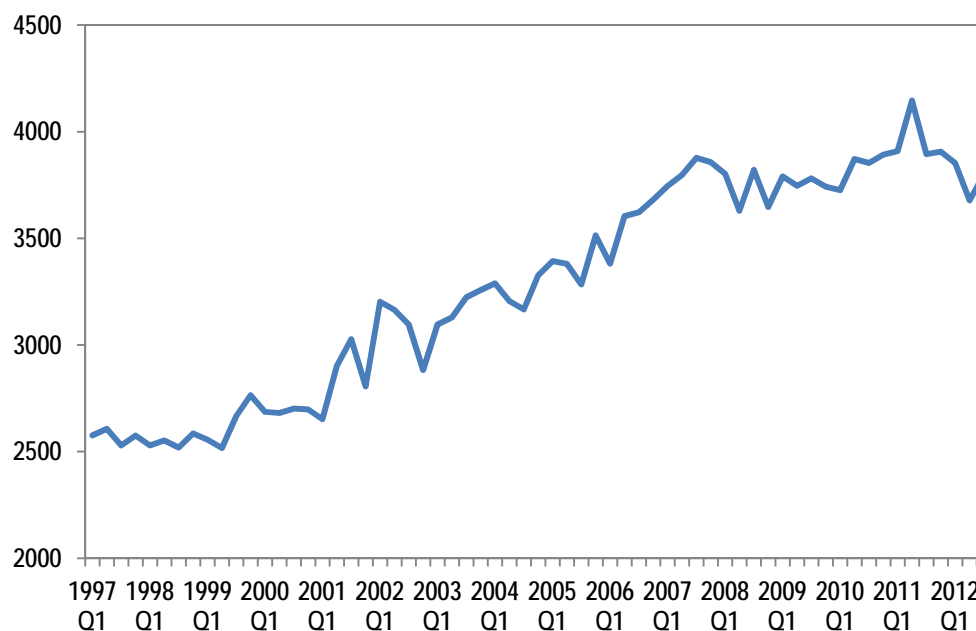
Figure 14: Average weekly household spend on recreation & culture, by income quintile and age of household reference person, 2010, £



Source: ONS Family Spending survey, 2010

There are other data sources through which we can gain further insight into trends in expenditure on the arts and culture. The ONS' Consumer Trends dataset, for example, is presented according to the Classification of Individual Consumption by Purpose (COICOP). Figure 15 below charts the consumption of the COICOP category 'cultural services'.²³ These more timely data suggest a real terms decline between Q2 2011 and Q2 2012, with only a slight recovery in Q3 2012.

Figure 15: Quarterly household consumption of cultural services, 1997-2012, £m (2010 prices)



Source: ONS Consumer Trends Bulletin, Q3 2012

2.7 Funding of the arts and culture

This section considers funding arrangements specific to the arts and culture industry, including an analysis of public and other sources of funding, which have not featured in the analysis up to now. We feature museums because the analysis funding is important in the context of the analysis of the spillover impacts of museums in sections 4-7 of this report.

Funding in England and the UK is derived primarily from three channels: earned income, such as from ticket sales and merchandise; public funding, such as from Arts Council England, local authorities and other public bodies; and contributed income, which includes sponsorship, trusts, and donations. Between 2011 and 2015, the Arts Council is expected to invest £1.4 billion of public money from government and an estimated £1 billion from the National Lottery in support of the arts and culture in England.

The analysis below makes use of 2011-2012 data provided by 796 regularly funded arts and cultural organisations supported by the Arts Council, which the Arts Council made available for Cebr's analysis. While these organisations may not represent the funding structure that is typical for all the

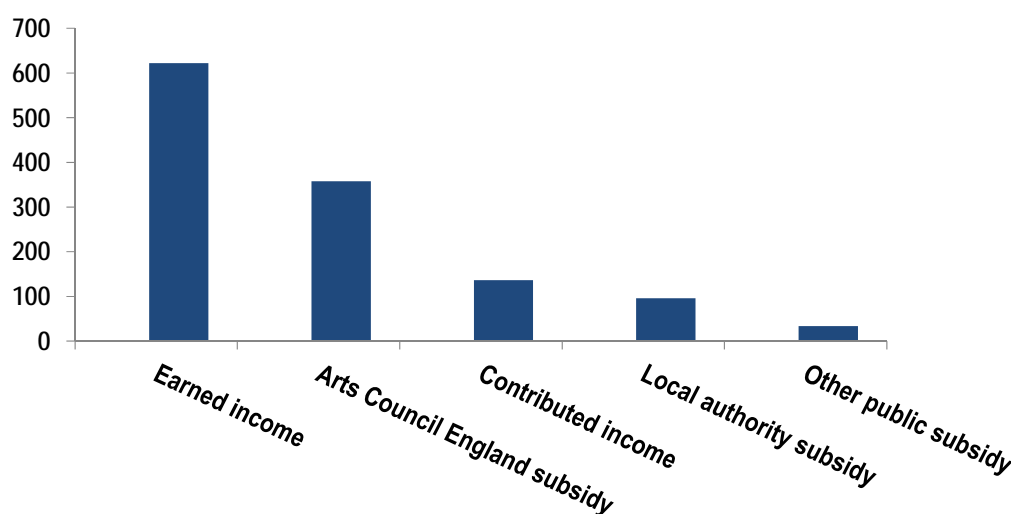
²³ But this metric is also an over-estimate in terms of our definition of the arts and culture industry, as it includes historical monuments, national parks, zoological and botanical gardens, as well as license fees and subscriptions for TV networks.

arts and culture organisations in the industry, they are nevertheless representative of a significant proportion of the aggregate economic activities of that industry. Specifically, we estimate that organisations receiving regular Arts Council funding support 40 per cent of employment in the creative, arts and entertainment industry (R90) in the UK.

However, they are unlikely to be representative of organisations operating within the ‘book publishing’ (SIC J58) or ‘sound recording and publishing’ industry (SIC J59), which is likely to contain a much higher proportion of organisations that are less reliant on direct public funding.

Figure 16 illustrates the importance of each of the aforementioned income streams using data supplied by the arts and culture organisations that receive regular funding from the Arts Council relating to the financial year 2011-12.

Figure 16: The publicly funded arts industry’s income by source, (£ millions)



Source: Arts Council England²⁴, Cebr analysis

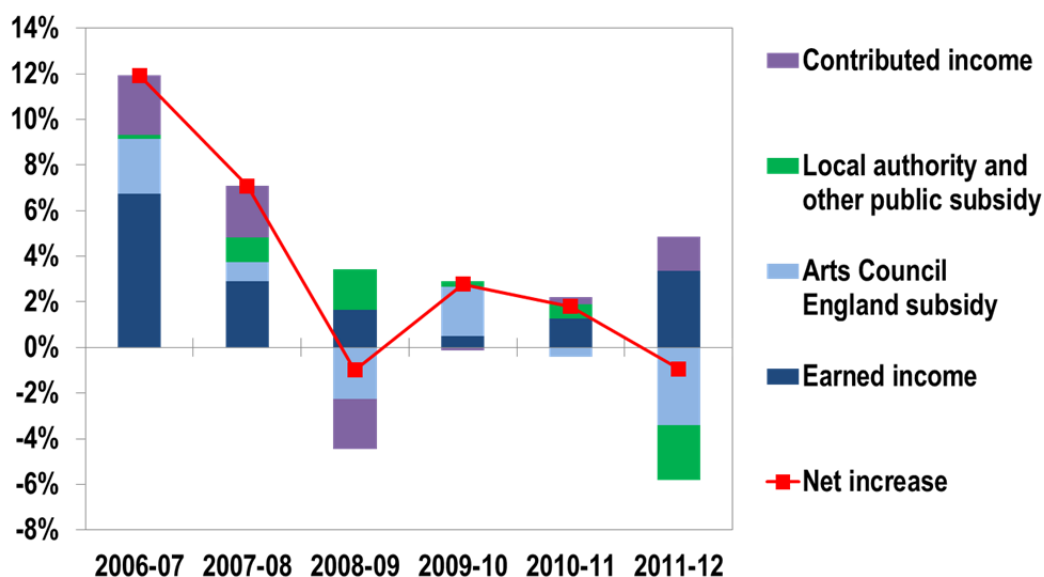
The single largest contribution to the £1.2 billion received by the arts and cultural organisations covered was earned income, responsible for £622.2 million or 50 per cent of the total. Public funding made the next largest contribution. Specifically, taken together, Arts Council²⁵ (£357.7 million), local authority (£95.9 million) and other public subsidies (£33.7 million) comprised 39.2 per cent of total income. Contributed income was the third most important individual component of total income, accounting for £136.5 million, or 11 per cent of the total.

Figure 17 illustrates how the importance of each of these three sources of income has changed since 2006 for the average funded arts organisation, again using data supplied by the arts organisations that receive regular funding from the Arts Council. The net change shows the percentage growth in income, while the bars illustrate the contributions of each source of income to this change.

²⁴ Regularly funded organisations: Key data from the 2005/06 to 2011/12 to annual submission. Arts Council England.

²⁵ Including distributed lottery funding.

Figure 17 – The contribution to changes in average income of regularly funded arts and cultural organisations by source, 2011 prices (percentage points) and net increase (per cent)



Source: Arts Council England (see footnote 24), Cebr analysis

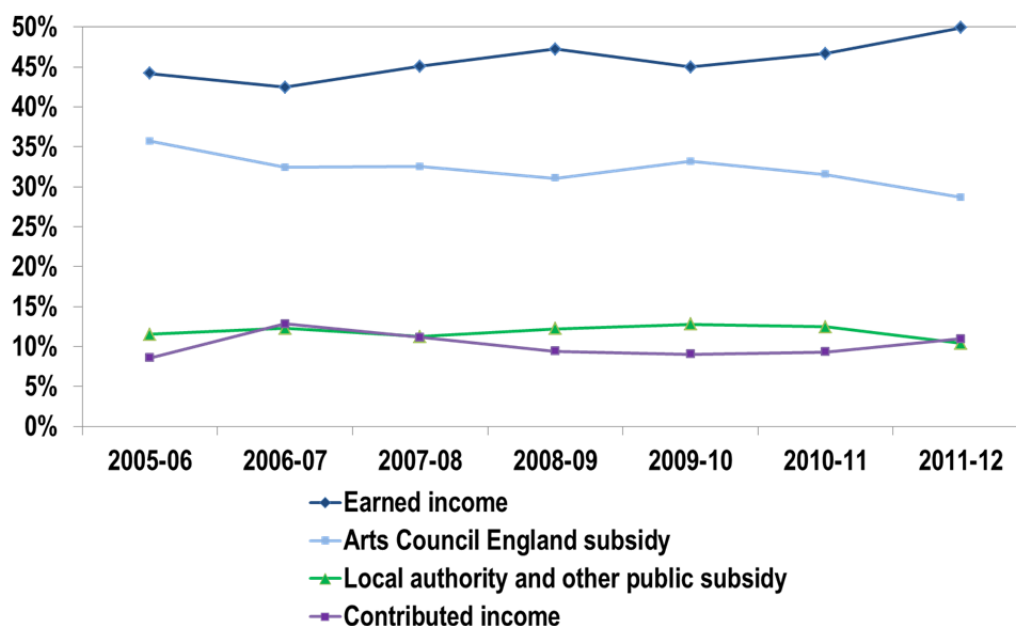
This illustrates that the greatest increases in income in three of the last six years have come from increases in that which is earned, which makes a positive contribution in each year. Over the period, average earned income increased by six per cent in real terms each year.

Public funding made net positive contributions to the year on year changes in these arts organisations' incomes until 2008-09 when public funding was flat, largely because Arts Council funding is estimated to have fallen by 6.8 per cent. This was offset by a 17.4 per cent increase in local authority and other public funding. Public funding made a sharp negative contribution to the year on year change in income in 2011-12, when Arts Council funding was cut by 10.7 per cent and local authority and other public subsidies fell by 19.0 per cent. These factors contributed minus 5.8 percentage points to the 0.9 per cent overall decline in average income in 2011-12.

Contributed income made up some of the shortfall caused by the fall in public funding in 2011-12, increasing by 15.9 per cent. Contributed income over the period has made a positive contribution to arts and cultural organisations' income, which has also been sufficient to mark a shift in the structure of the industry's income streams. Despite falling by 18.6 per cent in 2007-08 and 1.2 per cent in 2008-09, contributed income has increased by an average of 8.5 per cent in each year since 2006-07.

The effect of these changing income structures is noticeable in the proportions that each income source contributed to all the income of these arts organisations over time. This is illustrated in Figure 18.

Figure 18 – The arts and culture organisations' income by source, percentage of total



Source: Arts Council England, Cebr analysis

The greatest contributor historically has been earned income. This comprised 50 per cent of total income in 2011-12. This is an almost six per cent increase since 2005-06 when earned income comprised only just over 44 per cent of income. The shares contributed by public funding have stayed roughly constant over much of the period, but fell noticeably in 2011-12, from 44 per cent in 2010-11 to 39 per cent in 2011-12.

The contribution made by contributed income also remained relatively stable over most of the period, but did increase 2011-12, increasing to 11 per cent from over nine per cent in 2010-11.

Museums are also experiencing cuts in the levels of public funding they receive, as illustrated in Figure 19 below. Between 2010-11 and 2011-12, the amount of grant in aid distributed to museums by DCMS fell by over eight per cent. By 2014-15, museums are expected to receive at least 16 per cent less per annum compared with the 2009-10 peaks – a fall of £60.6 million across museums.²⁶ Grant-in-aid typically represents around 60 per cent (and up to 82.5 per cent²⁷) of museums' income, so these reductions represent a significant cut to museums' financial resources.

Capital funding is expected to be the most severely cut, falling by over 63.5 per cent by 2014-15 compared to its 2009-10 peaks, while funding for current expenditures will fall by under 7.5 per cent. This is also shown in Figure 19 below.

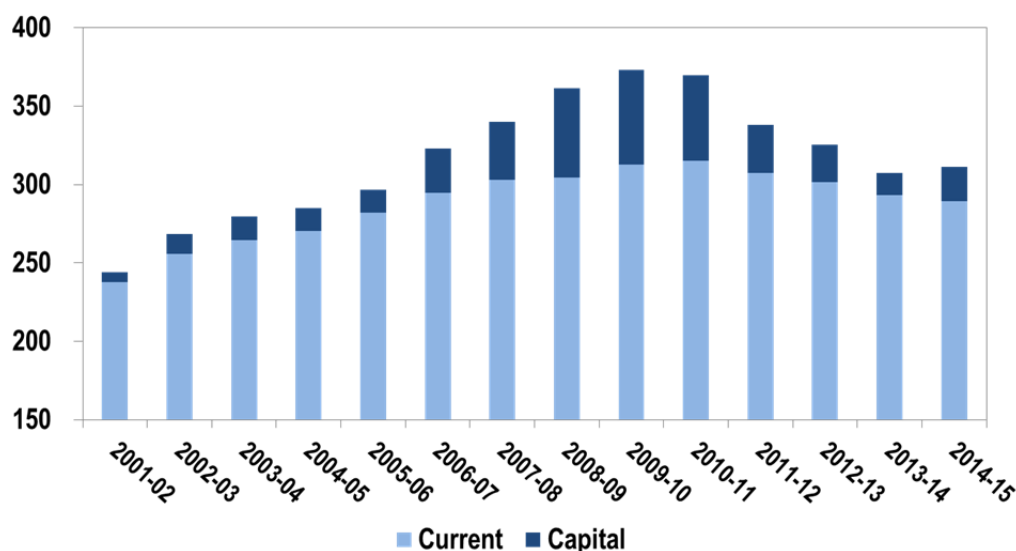
While grant in aid represents the most significant channel through which public funding reaches museums, a variety of other sources such as the BBC, Heritage Lottery Fund, the Arts and

²⁶ This does not include further cuts of 1.09 per cent and 1.06 per cent – in 2013-14 and 2014-15 respectively – announced in Budget 2013, which have not yet been formally announced by DCMS. This brings the total drop between 2009-10 and 2014-15 to 17.1 per cent.

²⁷ DCMS charitable giving table.

Humanities Research Council, the Renaissance programme²⁸, the Ministry of Defence and many UK universities, among others, all provide a means through which museums can raise funds. The difficult economic environment means, however, that each of these channels is likely to become constrained as competition increases for a shrinking pool of resources.

Figure 19: DCMS Museum funding, grant in aid £ millions



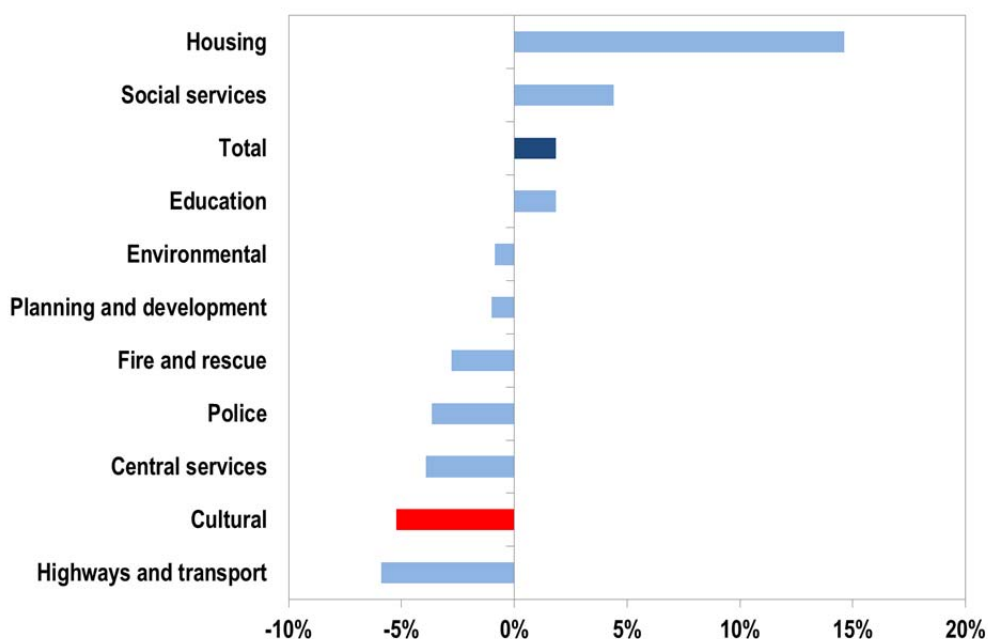
Source: DCMS²⁹

The arts and culture industry is likely to be among the most severely affected by cuts in government spending. As Figure 20 shows, cultural spending by local authorities in England has already been cut by just over five per cent in real terms since 2008-09 – more than all other services apart from highways and transport, where current expenditure has fallen by six per cent. This will undoubtedly place a strain on the services that the arts and culture industry is able to offer and necessitate its increased reliance on other sources of income.

²⁸ This programme was originally run by the Museums, Libraries and Archives Council, but was moved to the Arts Council when the former was abolished.

²⁹ Grand in aid allocated to 22 DCMS sponsored museums.

Figure 20 - Local authority expenditure, real percentage change between 2008-09 and 2010-11 by service



Source: DCLG,³⁰ Cebr analysis

2.8 Exchequer contributions of the arts and culture industry

While the arts and culture industry is a significant recipient of public funding, they also contribute to the exchequer as a result of their productive revenue and value-generating activities. Table 3 below illustrates this estimated contribution in 2010-11, including a breakdown by type of tax.

Taken together, the arts and culture industry contributes approximately 0.7 per cent of all VAT, corporation tax, income taxes and national insurance contributions collected by HMRC in the UK. This was equivalent to £1.7 billion in total tax paid in 2010-11.

³⁰ Local government financial statistics England – based on total current expenditure by service category.

Table 3 - Tax contributions of arts and culture 2010-11, £ millions

Type of tax	Tax paid (£m)	Percentage of UK
VAT	887.7	1.1%
Corporation Tax	247.8	0.6%
Income Tax	413.0	0.3%
National Insurance Contributions	530.6	0.6%
Total ³¹	1,660	0.7%

Source: ONS,³² HMRC,³³ Cebr analysis

³¹ Percentage of total UK refers to the percentage of taxes considered here

³² The ONS supply-use tables 1997-2010, Annual Business Survey and Annual Survey of Hours and Earnings.

³³ Value added tax factsheet November 2011 and HMRC receipts data.

3 Macroeconomic impact of the arts and culture

This section sets out our findings on the macroeconomic contributions, including indirect and induced multiplier impacts, of the arts and culture industry. The section outlines the estimated contributions to GDP, GVA and ‘industrial’ output at basic prices from the national accounting data, employment and household incomes at the UK and England level from BRES and ASHE respectively, before examining the impacts across the other UK nations and English regions.³⁴

Due to the lack of sufficiently granular data, we were restricted to providing estimates of macroeconomic impacts for broader subsets of economic activities that constitute our definition of the arts and culture industry. It was not possible, in other words, to produce separate indicators for the six art forms – theatre, dance, literature, visual arts, music and combined arts. The primary research element of this study did provide data that, in aggregate form, produced a useful cross-check against our estimates based on the methods outlined in Appendix III.

Were the Arts Council to request from all National Portfolio Organisations (NPOs) the data requested in the survey that formed part of this study,³⁵ the Arts Council would eventually have at its disposal a robust sample with which separate macroeconomic impacts could be estimated for things like the six art forms. The same is true for NMDC and its member organisations. The data requested as part of our survey is shown in **Appendix IV**.

3.1 Embedding the arts and culture within our macroeconomic impacts framework

The more technical aspects of our approach are outlined in Appendix III. Here, we provide a broad outline of the process of embedding the arts and culture within our macroeconomic impacts modelling framework in practice. To establish the size and economic impact of the arts and culture, we adopted the framework provided by the ONS’ supply-and-use tables, the most detailed official record of how the industries of the economy interact with each other, with consumers and with international markets in producing the nation’s GDP and national income.

Making use of the supply-and-use framework to analyse the arts and culture – which consists of subsets of a number of the broad industry groups at the level of disaggregation provided by this framework – is one of the best means of ensuring consistency with the national accounting framework. The process of embedding a specific subset of productive activities within this framework involves assigning that subset or, rather the newly created arts and culture ‘industry’ an explicit role within the supply-use tables and Cebr’s input-output models.

Having assigned roles within this macro impacts framework for the arts and culture (as defined for the study), we had the foundation for establishing:

- *The economic size (or direct impact) of the arts and culture*, using standard measures of GVA – and, from this, the percentage contribution to GDP – and employment
- *The wider economic impact of the arts and culture on the UK economy*, using Leontief input-output modelling to estimate a full set of (matrix) multipliers capturing direct, indirect and induced impacts on ‘industrial’ output, GVA, employment and household incomes

³⁴ Note that the estimates of the macroeconomic impacts of the arts and culture industry presented in this section do not take into account ‘additionality’ for the reasons outlined in section 1.3 above.

³⁵ Questions 12, 13 and 16 in particular.

We use the multipliers in association with the direct impacts data to produce estimates of the total impacts of the industry through the supply chain response (indirect impacts) and through the spending of the arts and culture employees in the wider economy (induced impacts). We produce these size and impact measures for the UK and England as a whole before analysing regional differences.

The process of assigning the arts and culture an explicit role within the supply-use tables requires, as a starting point, estimates of the relevant economic indicators from whatever aggregate financial data exists for those activities. These were provided for over 800 organisations that were in receipt of regular funding from the Arts Council in 2011-12, which we combined with data provided by individual arts and cultural organisations during our primary research. These data were cross-referenced with ONS data relating to the broader industry groups (from which the subsets of productive activities that make up our definition of the arts and culture industry are drawn) so as to capture the activities of non-Arts Council-funded arts and culture organisations.

Building a picture of the size and structure of the arts and culture industry's supply chain – fundamental to understanding economic impacts – was helped by the aggregate estimates from the aforementioned sources but also, to an extent, by the expenditure breakdowns provided within them. Where gaps remained we developed assumptions based on the data for the broader SIC two-digit industries from which our definition of the arts and culture industry is drawn.

Taking total turnover of the arts and culture industry as, in economic terms, the total demand for its services provides the starting point.³⁶ From section 2.1 above, we know Cebr's estimate, based on the business survey datasets, is that total turnover of the arts and culture industry is as presented in Table 4 below. This illustrates a fall of £0.4 billion between 2008 and 2011.

Table 4: Total turnover of the arts and culture industry, £ billions

Year	Turnover (£bn)
2008	12.8
2009	11.9
2010	12.2
2011	12.4

Source: ONS Annual Business Survey 2008-2011, Cebr estimates

This is followed by a process of backward induction through the supply-and-use tables, involving (i) matching the demand for the arts and culture's services to their supply; (ii) establishing the corresponding production, income and expenditure accounts for the arts and culture, including the industry's supply chain; and (iii) adapting the supply-use tables to ensure that they are re-balanced to produce the same level of GDP under the production, income and expenditure approaches to its calculation as in the original tables.

³⁶ Turnover, in other words, is equated with total supply and total demand for the arts and culture industry's products and services. This equation occurs at purchasers' prices, which is explained in Appendix III.

Cebr's input-output models use the 2010 supply-use tables as their foundation so the 2010 estimated turnover of £12.2 billion was taken forward in the analysis. With this as our starting point, we proceeded to embed the arts and culture within the modelling framework for our analysis. The key element of this is to understand the size and structure of the arts and culture industry's supply chain, our estimates for which are presented in Table 5 below.

This shows the categories of goods and services that the arts and culture industry requires for carrying out their own activities and, therefore, the industries from which they purchase them. These are the sectors and industries in which jobs and economic output are supported by the intermediate input demands of the arts and culture industry at the local, regional and national level.

Table 5: Cebr's estimates of the arts and culture industry's supply chain, 2010 £m and percentage of total

Sector	Intermediate demand (£m)	Percentage of total
Information and communication	1,535	19.2%
Manufacturing	1,440	18.0%
Administrative and support service activities	1,270	15.9%
Arts, entertainment and recreation	1,225	15.3%
Professional, scientific and technical activities	1,017	12.7%
Electricity, gas, steam and air-conditioning supply	320	4.0%
Transportation and storage	306	3.8%
Construction	283	3.5%
Financial and insurance activities	149	1.9%
Real estate activities	108	1.4%
Other service activities	54	0.7%
Accommodation and food service activities	89	1.1%
Wholesale and retail trade	73	0.9%
Education	57	0.7%
Water supply; sewerage, waste management	27	0.3%
Human health and social work activities	34	0.4%
Public administration and defence	18	0.2%
Agriculture, forestry and fishing	2	0.0%
Mining and quarrying	1	0.0%

Sector	Intermediate demand (£m)	Percentage of total
Total	8,008	100.0%

Source: the Arts Council, ONS, Cebr primary research, Cebr analysis

Table 5 shows that the greatest proportion of the arts and culture industry's external spend were on information and communications, amounting to 19.2 per cent of the total. This includes services such as publishing, computer programming and broadcasting services and telecommunications. Manufacturing also represents a significant proportion of the arts and culture supply chain, representing 18.0 per cent of intermediate purchases.

The third highest destination for the intermediate spend of the arts and culture industry is estimated to be the administrative and support services sector, which represents 15.9 per cent of the supply chain. This includes services such as recruitment agencies and office administration services, which would seem to indicate that the arts and culture industry tends to outsource or employ contracted, as opposed to permanent, employees to fulfil these roles. Intermediate spend by the arts and culture industry in the broader arts, entertainment and recreation sector is also estimated to be high at 15.3 per cent, reflecting the close links shared between the arts and culture organisations themselves and between them and the commercial creative industries.

3.2 Contribution to GDP of the arts and culture

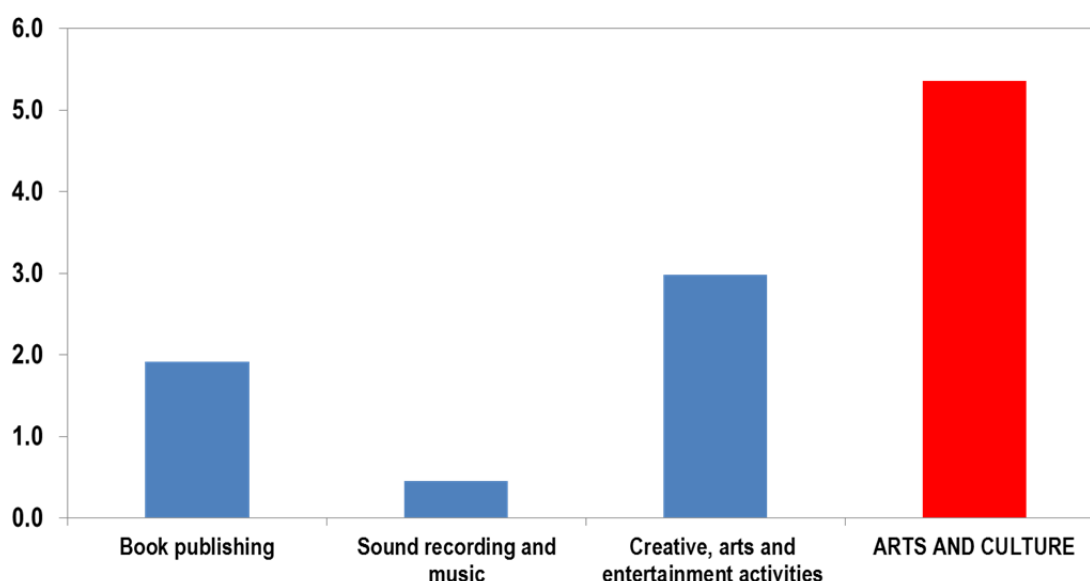
Based on the approach and methodology outlined above and in Appendix III, Cebr estimates that the arts and culture industry accounts for approximately 0.4 per cent of UK GDP and 0.4 per cent of England's aggregate GVA.³⁷ This equated in 2010 to an absolute GVA contribution of £5.4 billion. This is lower than the 'business economy' estimate of £5.6 billion of GVA presented in section 2.2. The £5.4 billion is, arguably a more robust estimate of the direct GVA contribution in the industry as it reflects the required adjustments to business survey data for when it is incorporated in the national accounting framework, which are outlined in Appendix III.

Figure 21 illustrates the direct GVA contributions of the arts and culture industry as a whole and broken down by three broad subsets of productive activities, the sum of which constitute the arts and culture industry.³⁸ The broad subsets are presented in rank order. The greatest contribution of £3 billion was made by creative, arts and entertainment activities (SIC R90), while book publishing (SIC J58.11) and sound recording (SIC J59.2) represent £1.9 billion and £0.5 billion of overall arts and culture GVA respectively.

³⁷ That is, the value of what is produced less the value of the intermediate goods and services used as inputs to produce it. GVA is also commonly known as income from production and is distributed in three directions – to employees, to shareholders and to government. GVA is, as noted previously, linked as a measurement to GDP – both being a measure of economic output. That relationship is (GVA + Taxes on products - Subsidies on products = GDP). Because taxes and subsidies on individual product categories are only available at the whole economy level (rather than at the sectoral or regional level), GVA tends to be used for measuring things like gross regional domestic product and other measures of economic output of entities that are smaller than the whole economy.

³⁸ Recall that these groups of activities constitute either the whole of or subsets of the SIC two-digit industries analysed in the previous section of the report, namely J58, J59, R90 (whole of) and R91. See Table 2 above.

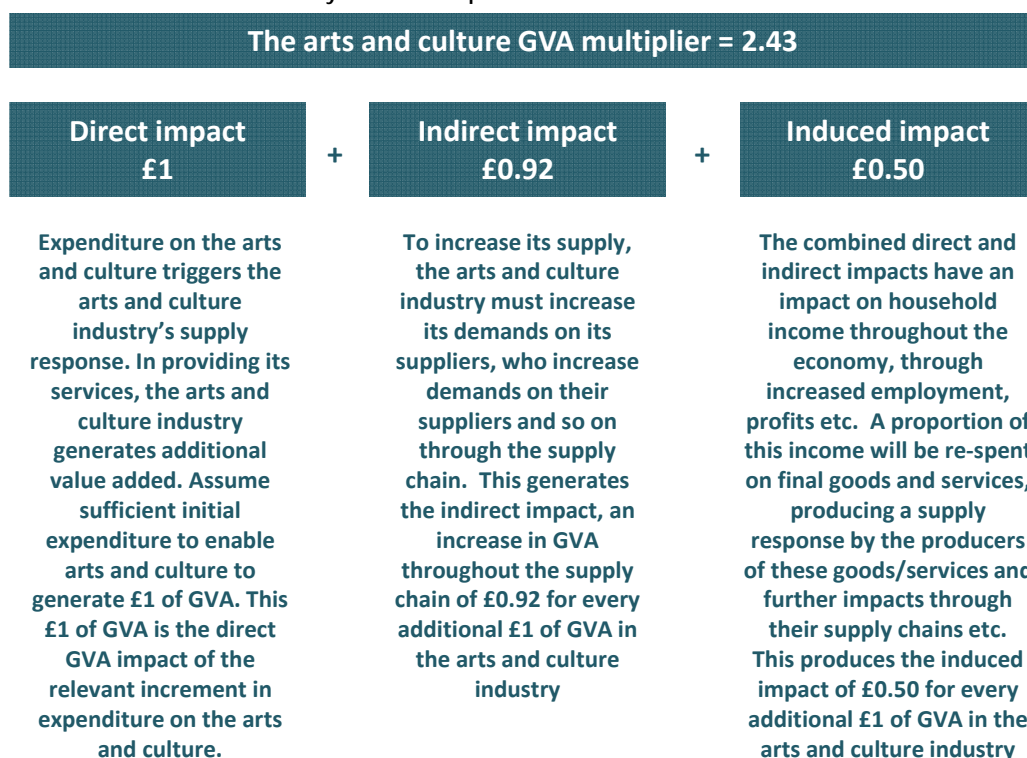
Figure 21: Contributions to UK GVA, 2010 (£ billions)



Source: ONS, Cebr primary research, Cebr analysis

The impact of the arts and culture in England or, in fact, the UK is not confined to these direct GVA contributions. Cebr's input-output modelling has produced estimates of the indirect and induced multiplier impacts of the arts and culture industry. The estimated GVA multiplier is presented in deconstructed form in Figure 22 below.

Figure 22: The arts and culture industry's GVA multiplier



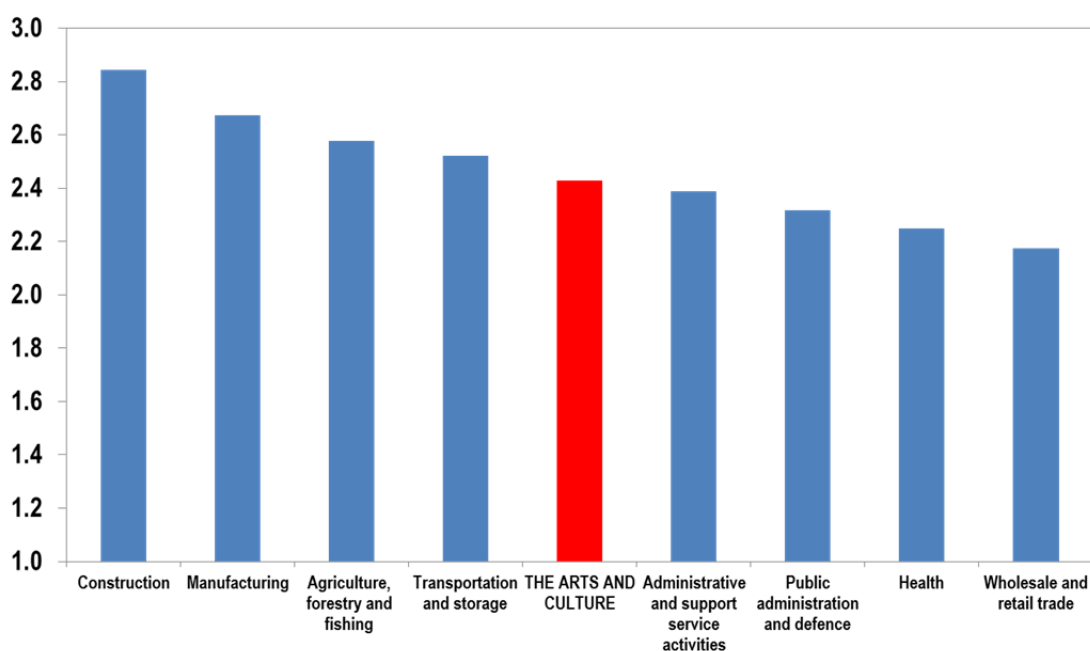
Source: Cebr analysis

Based on this, we estimate that for every £1 of GVA generated by the arts and culture industry, an additional £1.43 of GVA is generated in the wider UK economy through indirect and induced multiplier impacts. Based on this Type II multiplier (capturing direct, indirect and induced impacts), we estimate that the arts and culture industry supported the generation of an aggregate GVA of £13 billion in 2010, or about one per cent of UK GDP.³⁹

Figure 23 below compares the Type II multiplier estimate for the arts and culture industry with some of the broader sectors of the UK economy. The arts and culture industry is estimated to have a high GVA multiplier compared to other sectors. This is because to produce an additional unit of output in the arts and culture requires the industry to consume relatively higher proportions of the outputs of other industries.

Furthermore, the arts and culture industry's GVA-to-output ratio is low relative to many of the sectors from which its intermediate inputs are drawn, which would tend to boost in relative terms the indirect element of the estimated multiplier.

Figure 23: Comparison with other sectors, Type II GVA multipliers

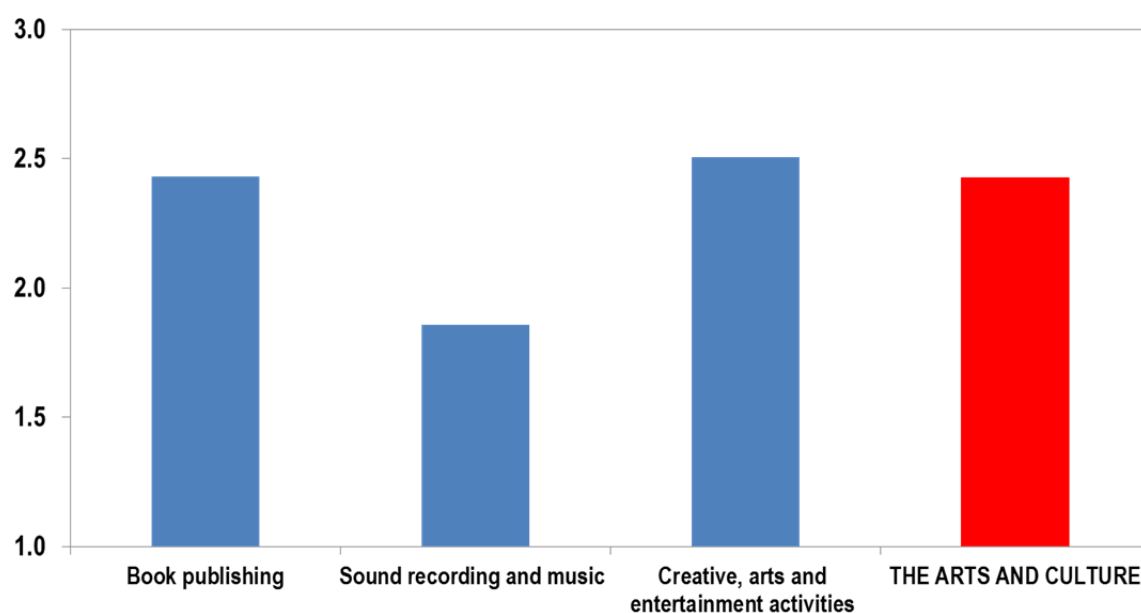


Source: Cebr analysis

The GVA multipliers for each of the subsets of productive activities that constitute the arts and culture industry are shown in Figure 24, all presented in rank order including the industry as a whole. The highest GVA multiplier, 2.51, is associated with creative arts and entertainment activities. Book publishing is estimated to have a GVA multiplier of 2.43, equal to that of the entire arts and culture industry. Sound recording and music publishing activities are associated with the lowest GVA multiplier of 1.86.

³⁹ Implicit here is the assumption that all spending rounds in the multiplier process occur in the same year in which the initial impact is experienced. This is certainly a realistic assumption for at least 75 per cent of these additional impacts.

Figure 24: Comparison between arts and cultural industries, Type II output multiplier



Source: Cebr analysis

The individual contributions of the three subsets of productive activities that make up our industry definition are shown in Table 6.⁴⁰ These are broken down by direct and each of the two multiplier impacts (indirect and induced). By far the greatest contribution, £7.5 billion, is made by the creative, arts and entertainment industry (R90). Book publishing activities (J58.11) make the next largest contribution, at £4.8 billion, while sound recording and music publishing activities (J59.2) are responsible for £0.9 billion of GVA once direct, indirect and induced impacts are taken into consideration

Table 6: Individual direct and multiplier GVA contributions made by the groups of activities that constitute the arts and culture industry, 2010 £ millions

GVA contribution	Creative, arts and entertainment activities	Book publishing	Sound recording and music and publishing activities	ARTS AND CULTURE
Direct	2,982	1,921	459	5,361
Indirect	3,062	1,647	250	4,959
Induced	1,433	1,105	144	2,682
Total	7,477	4,673	852	13,003

Source: Cebr analysis

⁴⁰ See footnote 38 above.

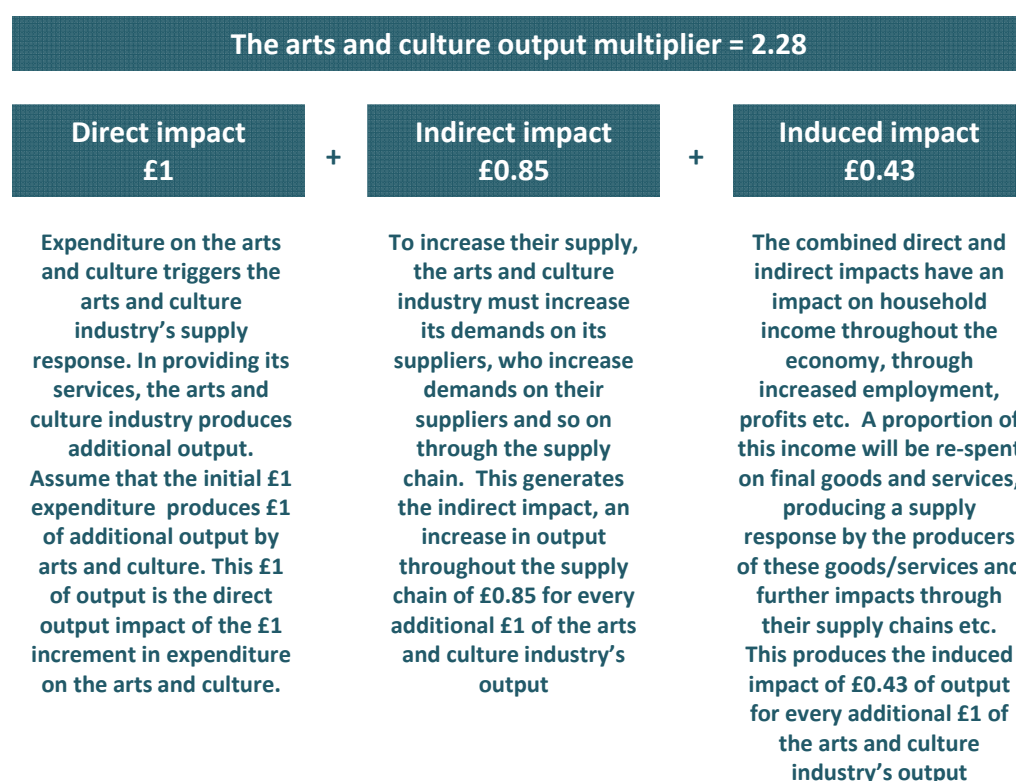
3.3 The ‘industrial’ output multiplier for the arts and culture

The measure of ‘industrial’ output is conceptually similar to turnover in business accounting, since it is comprised of all revenues earned before any costs are subtracted. These revenues, leaving aside taxes and subsidies, must cover wages paid to employees, a reasonable rate of return on capital but also what is paid to suppliers for the inputs required to ‘feed’ the relevant industry’s production process. ‘Industrial’ output is turnover after the adjustments required to convert business survey data for use in the national accounting framework (as outlined in Appendix III). The ‘industrial’ output measure is, therefore, typically larger than GVA because it still includes the costs of intermediate inputs.

The estimated 2010 turnover of £12.2 billion from section 2.1 is the relevant starting point, which then goes through a conversion process to arrive at a domestic ‘industrial’ output measure valued at basic prices. This ‘industrial’ output at basic prices for the arts and culture industry was estimated at £13.4 billion in 2010.⁴¹

But this again, only captures direct impacts. The ‘industrial’ output multiplier associated with the arts and culture industry is estimated at 2.28 and is presented in deconstructed form in Figure 25 below.

Figure 25: ‘Industrial’ output multiplier for the arts and culture



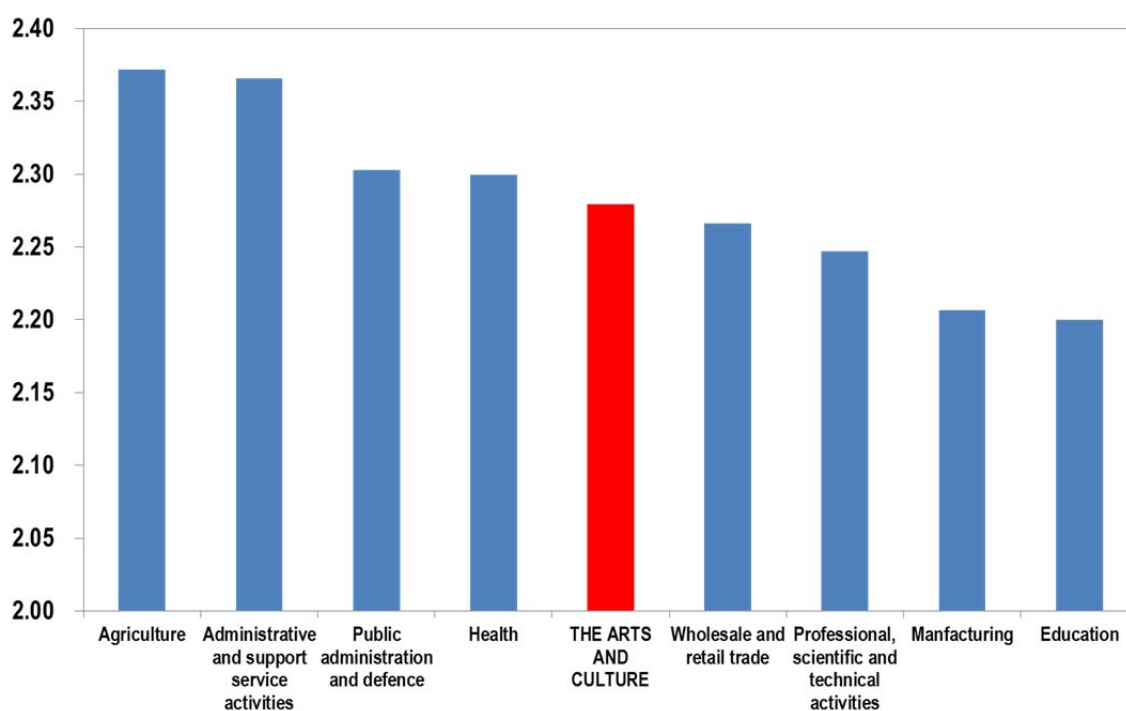
Source: Cebr analysis

⁴¹ Basic prices exclude taxes but include subsidies. The inclusion of subsidies is the most explanation for an output at basic prices estimate that is greater than the estimate of turnover. Because they reflect the amount received by the producer for a unit of a good or service, they are the preferred method of valuing output within the supply-use framework. See Appendix III for further details.

This means that **for every £1 of output of the arts and culture, an additional £1.28 of output is generated in the wider economy through indirect and induced multiplier impacts.** Based on this industrial output multiplier, the aggregate economy-wide output supported by the arts and culture industry in 2010 was estimated at £30.5 billion once direct and indirect and induced multiplier impacts were taken into account.

Figure 26 compares this ‘industrial’ output multiplier with those of other sectors of the economy. Similarly to GVA, the arts and culture industry appears to have a relatively high output multiplier by comparison with other sectors.

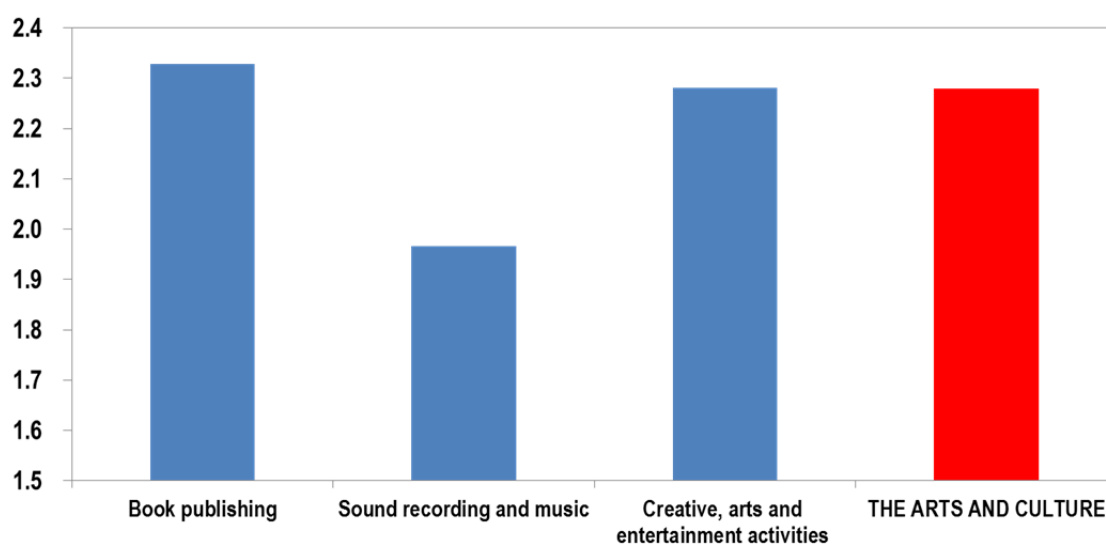
Figure 26: Comparison with other industries, Type II output multipliers



Source: Cebr analysis

Figure 27 provides a further comparison of the arts and culture industry as a whole with our multiplier estimates for the subsets of productive activities that form our industry definition.

Figure 27: Comparison between arts and cultural industries, Type II output multiplier



Source: Cebr analysis

The aggregate contributions of these subsets of productive activities are shown in Table 6, again broken down by direct, indirect and induced impacts.⁴² The creative, arts and entertainment industry (R90) is associated with the largest industrial output contribution of £17.3 billion. Book publishing activities (J58.11) made the next largest contribution, at £11.6 billion, while sound recording and music publishing activities (J59.2) result in industrial output of £1.7 billion.

Table 7: Individual direct and multiplier industrial output contributions made by the groups of activities that constitute the arts and culture industry, 2010 £ millions

Industrial output contribution	Creative, arts and entertainment activities	Sound recording and music and publishing activities	Book publishing	ARTS AND CULTURE
Direct	7,566	4,975	828	13,369
Indirect	6,719	4,075	506	11,299
Induced	2,970	2,532	295	5,796
Total	17,254	11,581	1,629	30,464

Source: Cebr analysis

⁴² See footnote 38 above.

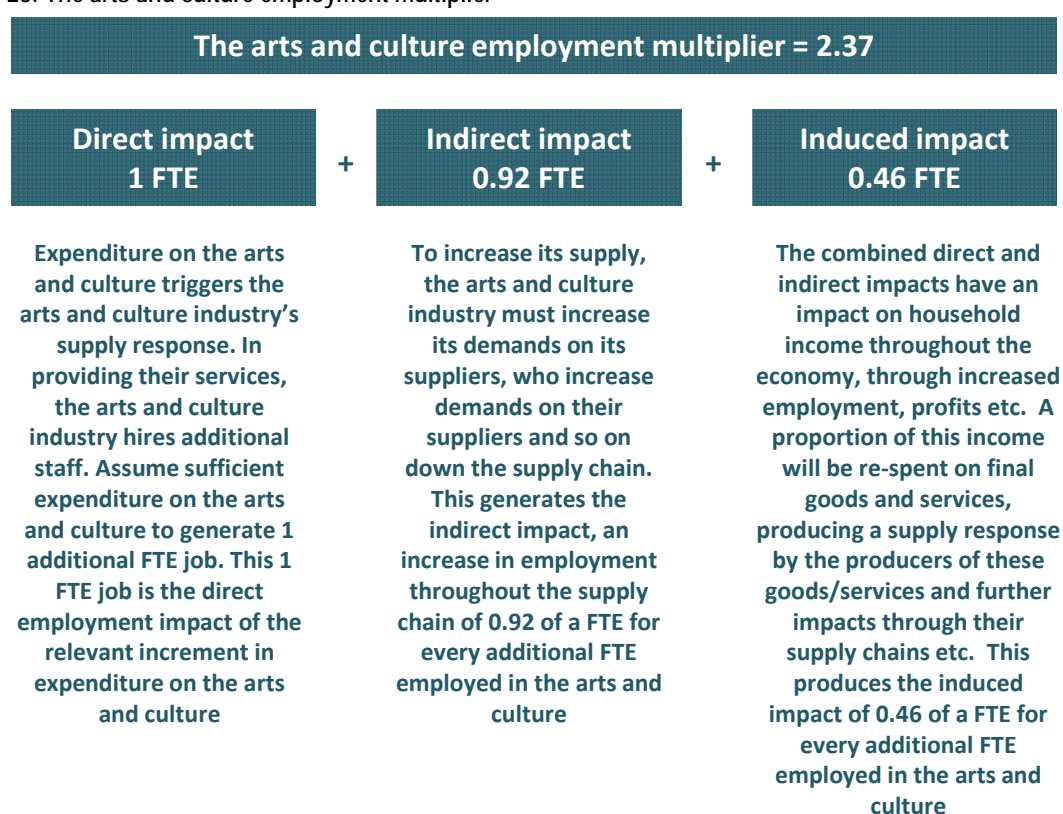
3.4 Contribution of the arts and culture to employment

Cebr's estimates of the direct employment contribution of the arts and culture industry to employment in the UK and England are as outlined in section 2.3 above.

However, as with GVA and 'industrial' output, the employment impact of the arts and culture is not confined to these direct job contributions. We used the same input-output models to produce an employment multiplier for the arts and culture, finding that, for every one FTE job supported by the arts and culture industry, an additional 1.37 FTE jobs are supported in the wider economy, as before through indirect and induced multiplier impacts. This employment multiplier of 2.37 is illustrated and explained further in Figure 28 below.

This produces an estimated **total FTE employment impact of 260.3 thousand FTE jobs** in 2010 – or 1.1 per cent of total UK employment.

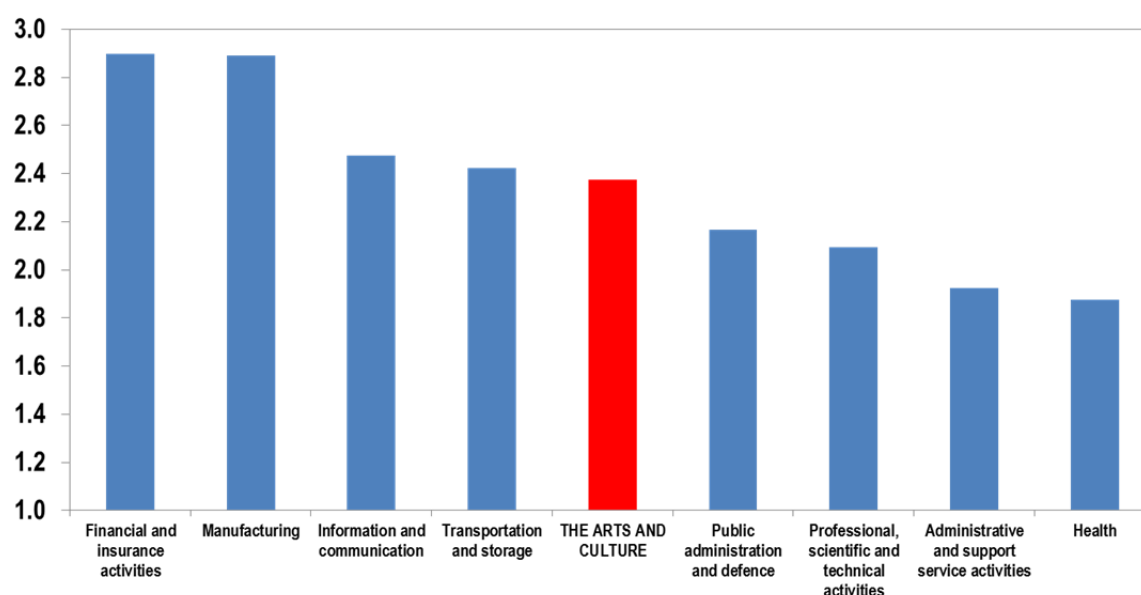
Figure 28: The arts and culture employment multiplier



Source: Cebr analysis

Figure 29 compares, as before, this employment multiplier for the arts and culture industry with that estimated for other broad sectors of the economy. The arts and culture's employment multiplier is lower than all of these bar two. Nonetheless, the employment multiplier of 2.37 is only marginally lower than that of transportation and storage and is higher than that of professional, scientific and technical activities.

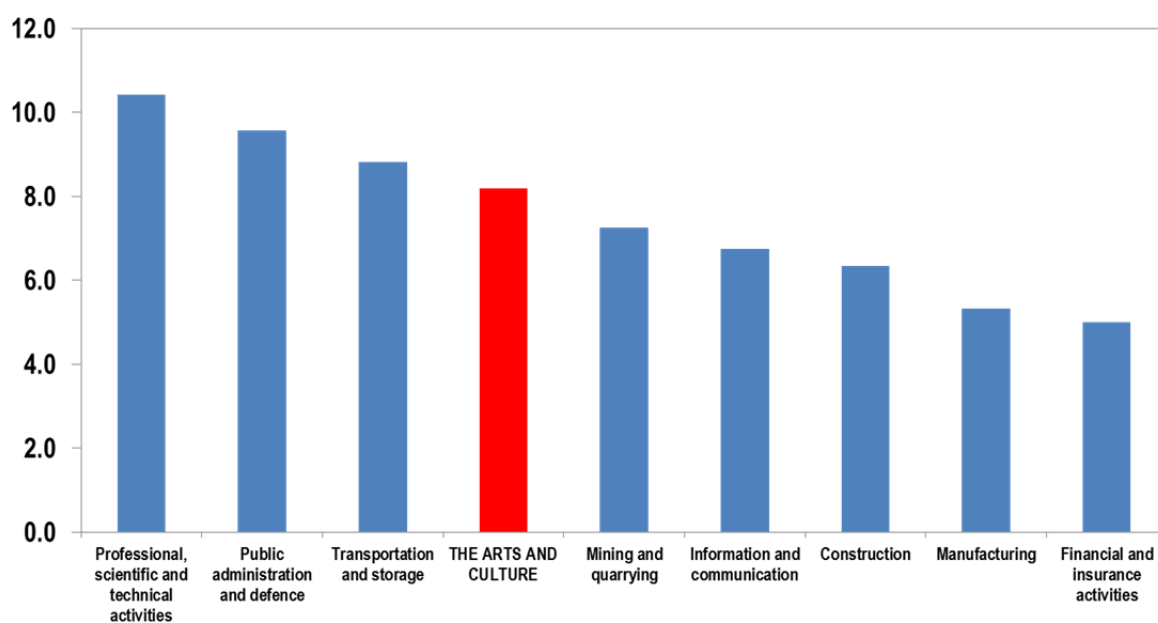
Figure 29: Comparison with top 10 industries, Type II employment multipliers



Source: Cebr analysis

The differences in these multipliers can be largely explained by differences in relative labour intensities of the production processes in these different sectors. Figure 30 below illustrates the relative labour intensities of the arts and culture compared to other industries, by estimating how many FTEs it takes on average to produce £1 million of output.

Figure 30: Labour intensities of the arts and culture industry compared with other broad sectors of the UK economy, FTEs per £1 million output



Source: Cebr analysis

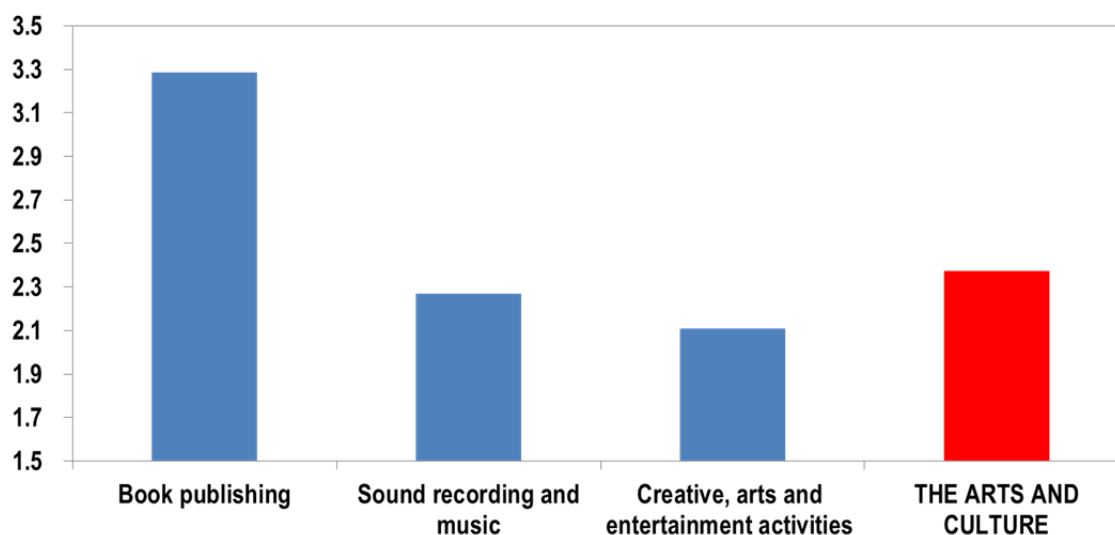
The relative labour intensities can be viewed as a rough representation of the relative labour productivities of each of the sectors – the higher the labour intensity, the more employees are required to produce a given level of output. This is an important driver of the differences in multiplier estimates illustrated in Figure 29 above.

For example, labour intensity in the real estate sector is relatively low compared with most sectors. This means that an increase in employment of one FTE in real estate would lead to a greater increase in output than achieved if increasing employment by one FTE in a different sector, such as professional and business services. This greater increase in output means that more is also demanded of the other sectors to the extent that they are the suppliers to the real estate sector. This generates relatively bigger indirect and induced effects, resulting in the relatively high employment multiplier estimate for the real estate sector featured in Figure 29.

Following the same logic, the higher labour intensities found within other sectors suggests that an increase in employment of one FTE would generate a relatively smaller increase in output, resulting in smaller estimated employment multiplier impacts. This would appear to apply to the arts and culture industry as we have defined it for the purposes of the study.

We can also examine the employment multipliers of the three activities comprising our definition of the arts and culture industry – these are shown in Figure 31. Book publishing features a high employment multiplier, which at 3.28 is by far the largest of the subsets of arts and culture activities. Sound recording and music has an estimated multiplier of 2.27, which compares with 2.11 for creative arts and entertainment.

Figure 31: Comparison between the subsets of industry activities that constitute the arts and culture industry, Type II employment multiplier



Source: Cebr analysis

Table 8 below shows the aggregate employment contributions of the arts and culture industry and of each of these groups of activities. (Again, these are broken down to show direct, indirect and induced impacts.) Employment within the arts and culture industry directly supports 109,600 FTEs, leading to economy-wide support of 262,000 FTEs.

Table 8 - Individual direct and multiplier employment contributions made by the groups of activities that constitute the arts and culture industry, 2010

Employment contribution	Creative, arts and entertainment activities	Sound recording and music and publishing activities	Book publishing	ARTS AND CULTURE
Direct	78,600	5,800	25,300	109,600
Indirect	61,400	4,900	35,600	102,000
Induced	25,700	2,600	22,100	50,400
Total	165,700	13,200	83,000	262,000

Source: Cebr analysis. Note that totals may not sum due to rounding.

Based on Arts Council data drawn from its annual survey of organisations to which it grants regular funding, these 800 organisations accounted for an estimated 14,000 FTEs in 2010-11. By applying the multiplier estimate for creative, arts and entertainment activities illustrated in Figure 31 above, we estimate that the organisations in regular receipt of Arts Council funding support an additional 15,500 FTEs in the wider economy, resulting in an aggregate employment contribution of 29,500 FTEs.

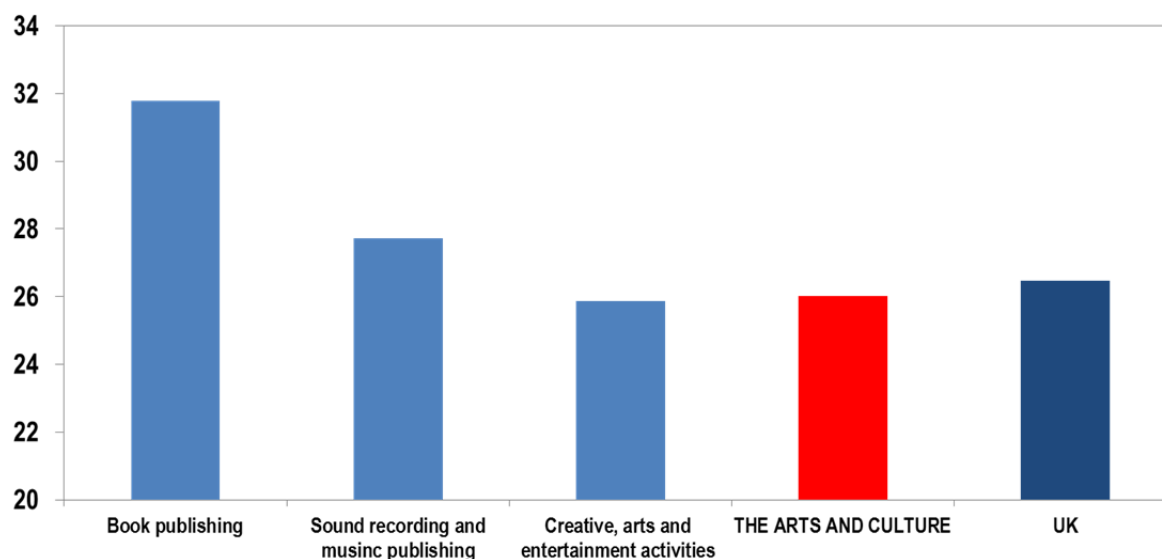
3.5 The impact on household incomes of the arts and culture

Based on official earnings data taken from the Annual Survey of Hours and Earnings (ASHE), the arts and culture industry paid a median salary of per FTE employee of £27,291 in 2012. This compares to the median across the UK as a whole of £26,095 in 2012.⁴³

Figure 32 illustrates a comparison between the arts and culture industry as a whole and the three subsets of activities that, in aggregate, constitute the industry.

⁴³ Medians are used in this section to provide more representative estimates from a household perspective. Means were used in section 2.5 as they are more relevant from a business perspective, but also due to data limitations.

Figure 32: Pay comparisons, median gross annual pay (2012, £ thousands)

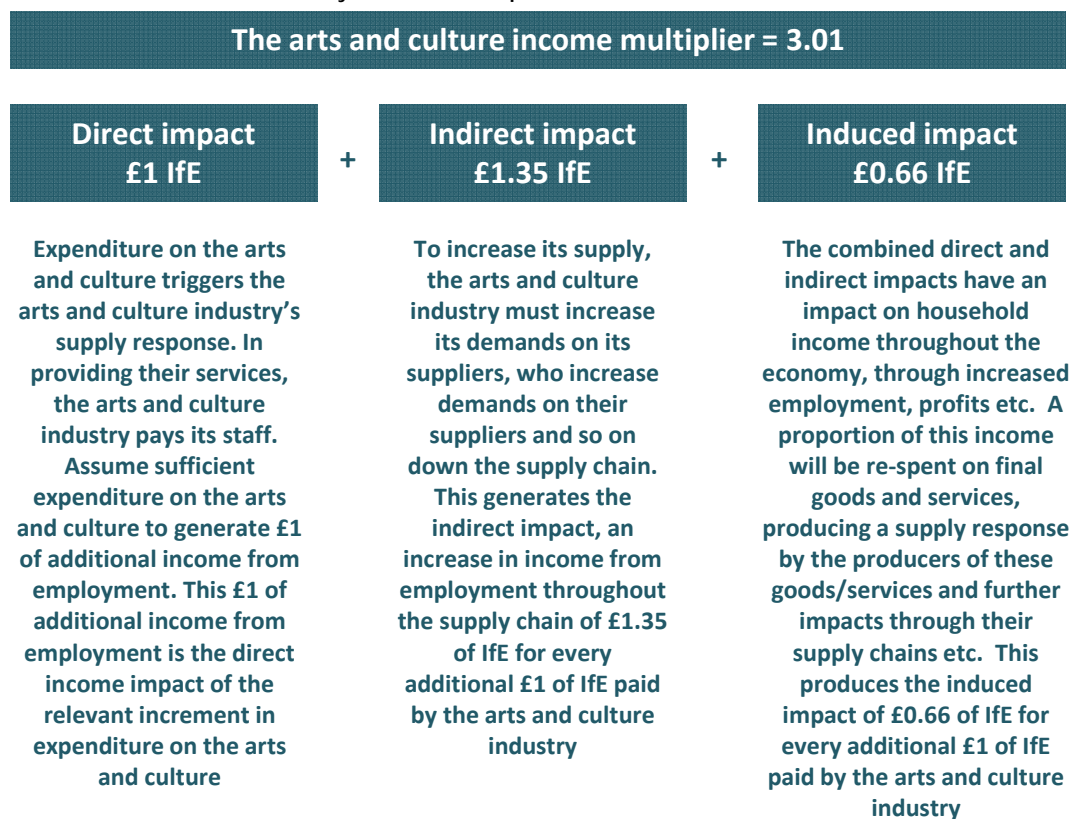


Source: ONS, Cebr analysis

Based on our input-output modelling we estimate that, for every £1 of income from employment generated in the arts and culture, an additional £2.01 of income from employment is generated in the wider economy through indirect and induced multiplier impacts. In other words, for every gross salary of £27,291 paid by the arts and culture industry, a further £54,800 of gross salary was earned elsewhere in the economy. This household incomes multiplier of 3.01 is illustrated in deconstructed form in Figure 33 below.

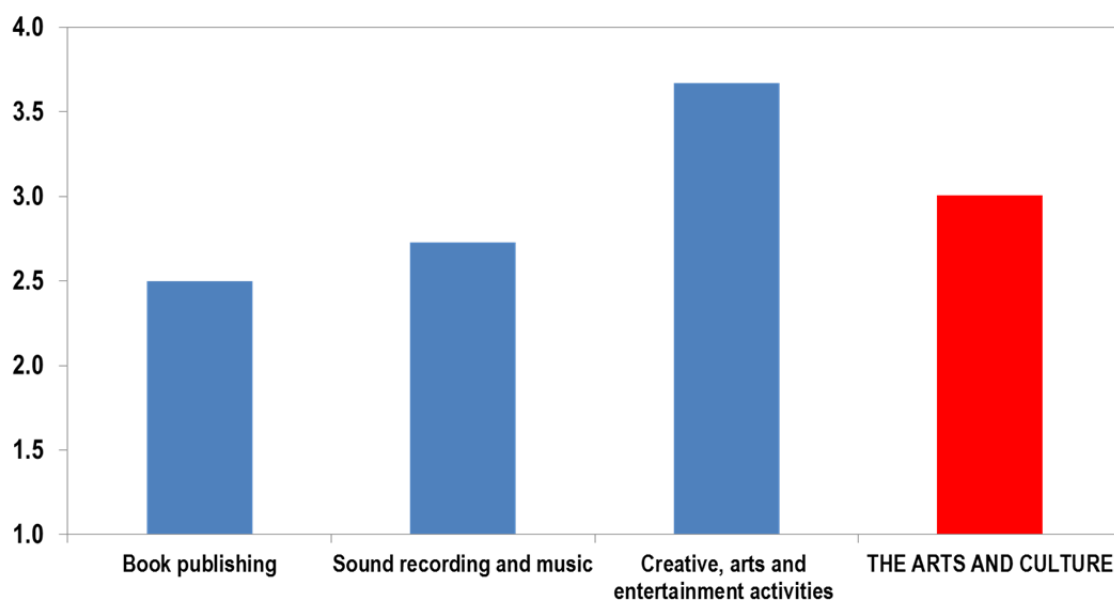
Figure 34 illustrates the comparison between the Type II multipliers estimated for the arts and culture and the ten highest estimated income multipliers for other broad sectors of the economy. The analysis shows that the arts and culture industry has one of the highest income multipliers of any UK industry. This is consistent with relatively high levels of pay in the sectors and industries from which the arts and culture industry sources its intermediate inputs including the creative industries which, as is illustrated in section 5 below, account for about 27 per cent of the arts and culture industry's supply chain.

Figure 33: The arts and culture industry's income multiplier



Source: Cebr analysis

Figure 34: Income multiplier comparisons, Type II income multipliers



Source: Cebr analysis

3.6 Regional variation in our multiplier estimates

While there is variation in the economic impacts estimated within the subsets of productive activities that form the arts and culture industry, there is also variation in the contribution made by the industry to various national and regional economies across the UK. Table 9 below illustrates the importance of the arts and culture across the UK in terms of its contribution to regional GVA.

Table 9: Direct GVA contributions of the arts and culture industry in each of the UK nations and English regions, 2010, £m / %

UK nation / English region	GVA (£m)	Percentage of area's GVA
London	1,575	0.57%
South East	980	0.52%
England	4,758	0.43%
UK	5,289	0.40%
East Midlands	285	0.36%
Scotland	370	0.35%
West Midlands	337	0.36%
East of England	398	0.36%
North West	420	0.35%
Wales	147	0.32%
South West	341	0.34%
North East	136	0.33%
Yorkshire and The Humber	287	0.32%
Northern Ireland	87	0.30%

Source: Cebr analysis

The arts and culture industry contributes 0.4 per cent of GVA on average across the UK nations and regions. This ranges from a high of 0.57 per cent of GVA in London, to a low of 0.3 per cent in Northern Ireland. Similarly, the greatest absolute regional contribution by far, £1.6 billion, is estimated in London, while the arts and culture contribute the least to the Northern Ireland economy, estimated at £87 million in 2010.

The supply chain of the arts and culture industry, presented in Table 5 above, suggests that an increase in the arts and culture industry's activities would primarily create a fairly balanced increase in the demand for the output of other arts organisations, administrative services, information and communication, professional services and manufacturing. Where these industries are relatively large as a share of their regional economies, the demands of the arts and culture industry can be satisfied to a greater extent within those regions. The effects of an increase in the industry's activities can, in

this case, also be captured to a greater extent within the region, leading to relatively higher regional multiplier estimates.

Table 10 displays the results of our input output modelling at the level of the UK nations and English Government Office Regions and shows the UK level multipliers for the arts and culture for comparison purposes. Separate (Type II) multipliers are shown for each of the variables GVA, industrial output, employment and incomes from employment, and ordered according to the magnitude of the GVA multiplier.⁴⁴

Table 10: Type II multipliers by country and region

Country / region	GVA	Output	Employment	Income
United Kingdom	2.43	2.28	2.37	3.01
Total England	2.36	2.22	2.32	2.93
South West	2.29	2.16	2.26	2.83
East of England	2.28	2.15	2.26	2.83
Scotland	2.28	2.15	2.24	2.79
North West	2.27	2.15	2.24	2.82
West Midlands	2.25	2.14	2.23	2.79
Yorkshire & The Humber	2.24	2.12	2.21	2.75
North East	2.21	2.10	2.17	2.70
South East	2.14	2.02	2.10	2.60
East Midlands	2.18	2.07	2.16	2.67
Northern Ireland	2.15	2.05	2.13	2.63
Wales	2.13	2.04	2.11	2.60
London	2.01	1.87	1.98	2.43

Source: Cebr analysis

These estimates suggest that the arts and culture industries of the South West and the East of England have the largest multiplier impacts of all the nations and English regions. This indicates that

⁴⁴ Note that these estimates capture the impacts of the arts and culture industry of a region on that region itself. They do not take account of the potential impacts on the arts and culture industries of other regions when the latter need to draw on suppliers in the region for which the multiplier estimate is being produced.

increasing spending on the arts and culture in these regions will create more localised impacts compared to other areas of the UK.

Wales and Northern Ireland are associated with lower multiplier impacts, while London is estimated to have the lowest. The regional economy in these cases is relatively less able to supply the goods and services demanded as a result of increased demand for the arts and culture. This means that more of these goods and services must be sourced from outside the region, reducing the multiplier effects realised within the region itself.

4 Spillover impacts of the arts and culture through tourism

This section presents our analysis of the spillover impacts of the arts and culture through tourism. The arts and culture can create additional spending by tourists in two ways. Some visit the UK primarily to visit arts and cultural attractions, while others take part in arts and cultural activities during trips that are made for other purposes, potentially extending trips and generating additional spending as a result.

We examine the economic benefits of both types of tourism which can be attributed to the arts and culture. Throughout this chapter, data on international visitors to the UK and their activities are drawn from the ONS International Passenger Survey (IPS). This survey collects information through interviews with between 700,000 and 800,000 passengers passing through the UK's ports and airports each year, and is used to produce official estimates of overseas travel and tourism patterns.

4.1 The role of the arts and culture in attracting tourists to the UK

Spending by tourists who come to the UK with the sole purpose of undertaking activities related to the arts and culture may be considered additional – that is, they can be expected not to have visited the UK had it not been for the arts and culture offering. These 103,000 visitors (who arrived for holiday and ‘miscellaneous’ purposes) would simply not have come to the country, and so their spending, totalling £38 million, can be entirely attributed to the arts and culture on offer in the UK.

For those individuals who come to the UK on holiday to take part in arts and cultural activities plus one or two other activities, the strength of the arts and culture offer is probably a significant factor in their decision to visit the country. Without the arts and culture available in the UK, these people who undertook few additional activities during their visit are still less likely to have chosen to come to the UK, and so their spending while here can be seen as a result of the arts and culture offer of the UK. Nearly 1.2 million people who visited the UK for a holiday or miscellaneous purposes in 2011 only undertook activities related to the arts and culture and one or two other activities, spending £597 million in total during their stay.

When combined with spending by visitors for whom the arts and culture attractions were the only reason for their visit, this gives total spending of £635 million by those for whom a main reason for their decision to visit the UK was the arts and culture.

Besides those individuals for whom arts and culture is a main motivating factor in their decision to visit the UK, survey data tells us that many other people visiting the UK for a whole variety of reasons, also take part in the arts and culture during their stay. Valuing the extent of their spending that can be attributed to the arts and culture is more difficult as, in some cases, this spending may not be additional. In other words, if the arts and culture attraction that a visitor attended was not on offer, they might well have spent the same amount of money elsewhere in pursuit of another activity.

We know, however, that many people are motivated to visit the UK by the strength of the arts and culture here. The Anholt-GfK Roper ‘National Brand Index’ illustrates this: as an annual international survey of 20,000 consumers, the index compares the global reputation of 50 countries by various metrics. The 2011 edition was the third consecutive year of the UK ranking fourth (out of 50) for contemporary arts and culture such as music, film, art and literature.⁴⁵

⁴⁵ VisitBritain.org *Foresight* monthly, October 2011

This demonstrates that the UK's arts and culture are a very strong draw for international visitors. Moreover, the London Visitor Survey 2009 found that two-fifths of overseas business visitors extended their stay for leisure purposes.⁴⁶ This survey, which samples 5,000 people per year, in a range of locations around the capital, does not give us any greater detail on what leisure activities those extending their trips undertook. But, given the importance of the arts and culture, it is reasonable to assume that a significant proportion of these extended stays were motivated by the wish to take advantage of the arts and culture offer in the UK.

4.2 Contribution through tourism when the arts and culture are the main purpose

Overall, 10 million inbound visits to the UK involved some engagement with the arts and culture in 2011, representing over 32 per cent of all visits to the UK and 42 per cent, or £7.6 billion, of all inbound tourism-related expenditure.⁴⁷ However, much of this expenditure could arguably have entered the UK regardless of the arts and culture offer. Isolating those people who are likely to have come to the UK primarily for the arts and culture would demonstrate the additional expenditure that enters the UK as a result of the arts and culture available.

People who arrived in the UK on holiday in 2011⁴⁸ who engaged only with the arts and culture were responsible for £38 million, or 0.2 per cent of all inbound tourism expenditures. This expenditure was evidently driven by the arts and culture offer, since the 103,000 visits involved were for no other purpose than to enjoy this offer.

But this represents an extremely strict constraint on what can be considered to be additional, since most people who arrive in the UK for primarily the arts and culture on offer could reasonably be expected to engage in other activities while visiting. The full list of activities from the IPS dataset is shown in Table 11 below, ranked according to the number of visits that recorded this activity and with those counted as the arts and culture clearly distinguished.

Table 11: IPS inbound tourism activities

Activity	Tourist visits involving activity, 2011
Went shopping	58.0%
Went to the pub	45.6%
Visited parks or gardens	36.4%
Visited castles or historic houses	29.1%
Visited museums or art galleries	27.2%
Visited religious buildings	22.1%
Went to countryside or villages	17.5%

⁴⁶ TNS Travel and Tourism (2009), London Visitor Survey Annual Report 2009, London Development Agency

⁴⁷ This means an average expenditure of £757 per visit. The figure for total visits is 30.8 million, which includes business, those visiting friends and relatives, those studying or in transit with an average spend of £584.

⁴⁸ This would exclude people visiting friends and relatives, on business, studying or in transit – all of whom would arguably have come to the UK regardless of the arts and culture offer – but includes people who came for 'miscellaneous' purposes.

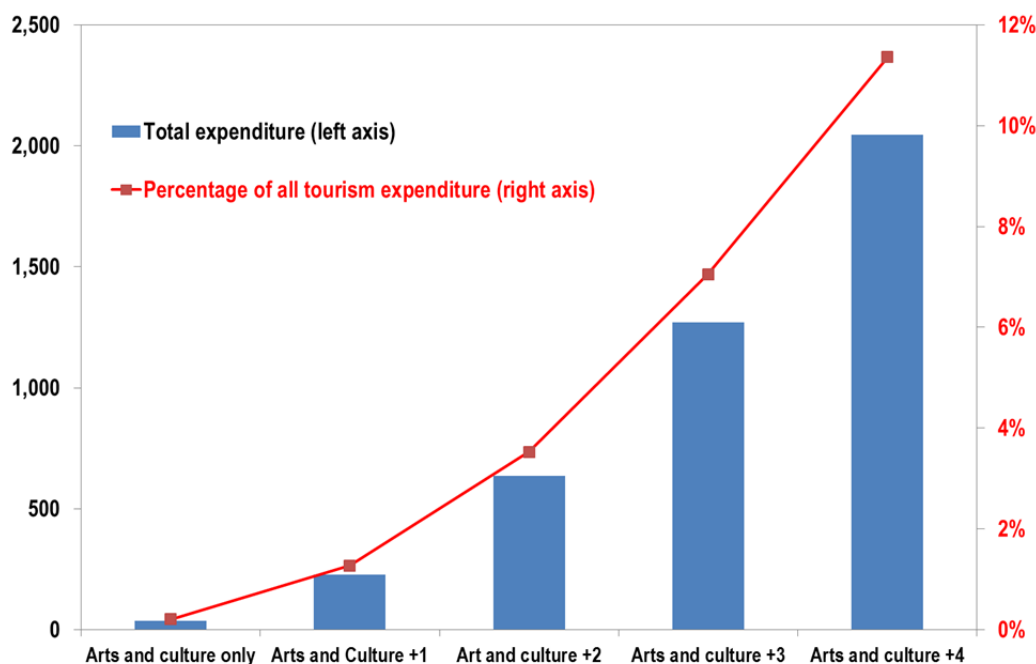
Activity	Tourist visits involving activity, 2011
Went to bars or nightclubs	12.6%
Went to the coast or beaches	11.8%
Went to theatre / musical / opera / ballet	9.2%
Attended a festival (e.g. music, food, arts, film)	3.3%
Went to a live sport event (e.g. at a stadium)	3.1%

Source: ONS International Passenger Survey 2011, Cebr analysis

By including the expenditure of people who engaged in not just the arts and culture activities but one, two, three or four other activities, tourism expenditures that can be associated with the arts and culture increases, as shown in Figure 35.

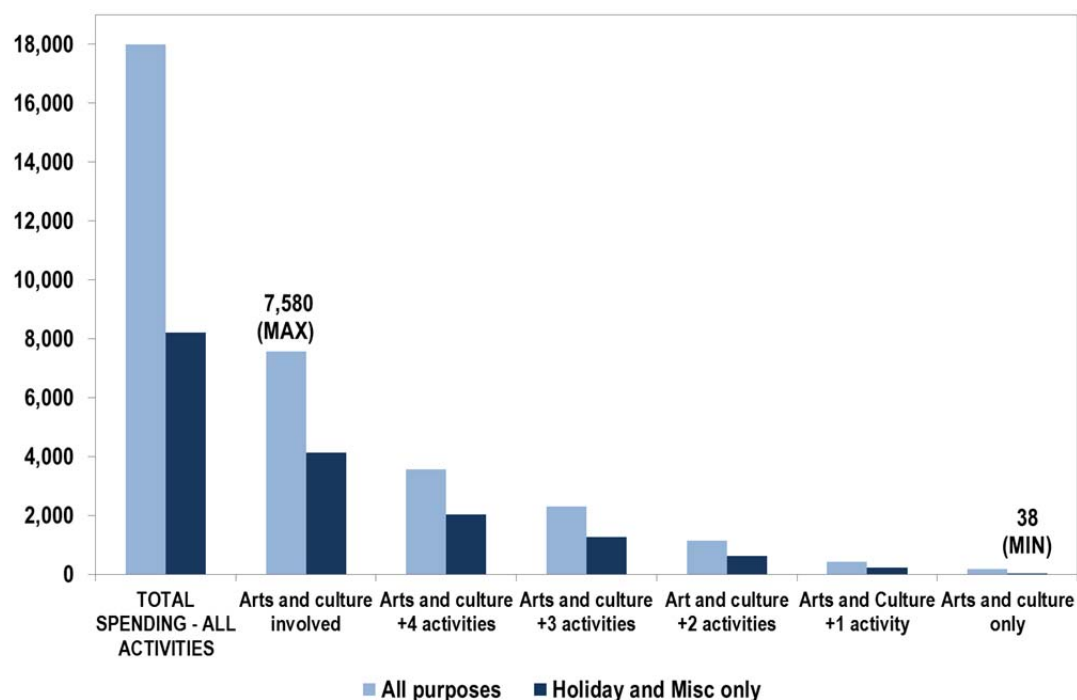
For the purposes of assessing the contribution of the arts and culture to the UK economy, we consider only those tourists who visit arts and cultural attractions and undertake up to two other activities, so that the arts and culture represents at least one third of all reported activities undertaken during the relevant sample of tourist trips. Using this definition, the additional tourism expenditure attracted to the UK in 2011 is estimated at £635 million. This is equivalent to 3.5 per cent of all expenditure by visitors to the UK and 7.7 per cent of all expenditures by people visiting the UK on holiday.

Figure 35: The arts and culture driven tourism expenditure in 2011, £m and percentage of total



Source: ONS International Passenger Survey 2011, Cebr analysis

Figure 36: Total inbound tourist expenditure by activity and purpose of visit, 2011 £ millions



Source: ONS International Passenger Survey 2011, Cebr analysis

4.3 Contribution through tourism when the arts and culture were not the main purpose

We also attempted to estimate the value of spending by international visitors that was driven by things other than the UK's museums, art galleries, theatres and other cultural institutions. The International Passenger Survey shows that more than 10 million international visitors to the UK in 2011 undertook some activity relating to the arts or culture. Subtracting those whose visits were for leisure purposes and mostly motivated by the arts and culture, and whose spending we had already accounted for above, leaves 8.7 million visitors who undertook some activities in the arts and culture during their stay in the UK.

The International Passenger Survey did not offer any way of breaking down the expenditure of these tourists which would allow the estimation of the share of their spending related to the time they spent engaging with the arts and culture. However, using a methodology developed by Travers (2004) for the NMDC report *Valuing Museums*, an estimate can be made. While many of the arts and cultural attractions in the UK are free, visitors are likely to spend money on travel, food and drink, accommodation and other ancillary activities as a result of the time they spend visiting these institutions.

The average spending per day by an international visitor to Britain was £76 in 2011 according to the IPS, the most recent estimate available. Following Travers (2004)⁴⁹ we suggest that a trip to a museum, gallery, theatre or other cultural attraction is likely to take between two and three hours,

⁴⁹ Travers, T. (2004), *Valuing Museums*, National Museums Directors Council

plus an hour for travelling. A single visit to a cultural destination may thus account for four hours, or a third of a visitor day. Given the average spending per visitor day, we assume that visitor spending for this portion of the day would be £25.33.

We also assumed that those international visitors for whom the arts and culture were not the main purpose of their trip undertake at least a single cultural activity.⁵⁰ This is likely to be an underestimate, as many of visitors will take part in more than one activity in the arts and culture even if this is not the main purpose of their trip. Thus, a lower-bound estimate of expenditures by international visitors that are attributable to the arts and culture when this is not the main purpose of their trip is £221.4 million.

Combining this estimate with our estimate of £635 million from subsection 4.2 above, the total spending by visitors to the UK that was directly motivated by the arts and culture in 2011 is at least £856 million. The breakdown of this estimate is shown in Table 12 below.

Table 12: Spending by visitors who engage with the arts and culture by purpose of visit

Visitor purpose	Number of visits	Total spending	Spending driven by the arts and culture
Holiday or miscellaneous Arts and culture only	103,000	£38 million	£38 million
Holiday or miscellaneous Arts and culture +1	363,000	£191 million	£191 million
Holiday or miscellaneous Arts and culture +2	806,000	£406 million	£406 million
All leisure trips where arts and culture are significant reason for visit	1,273,000	£635 million	£635 million
Visitors for other purposes undertaking some arts and cultural activity	8,741,000	£6,945 million	£221 million
All undertaking some arts and culture activity	10,014,000	£7,580 million	£856 million

Source: Travers (2004), ONS International Passenger Survey 2011, Cebr analysis.⁵¹

4.4 Selected features of 'arts and culture' tourists

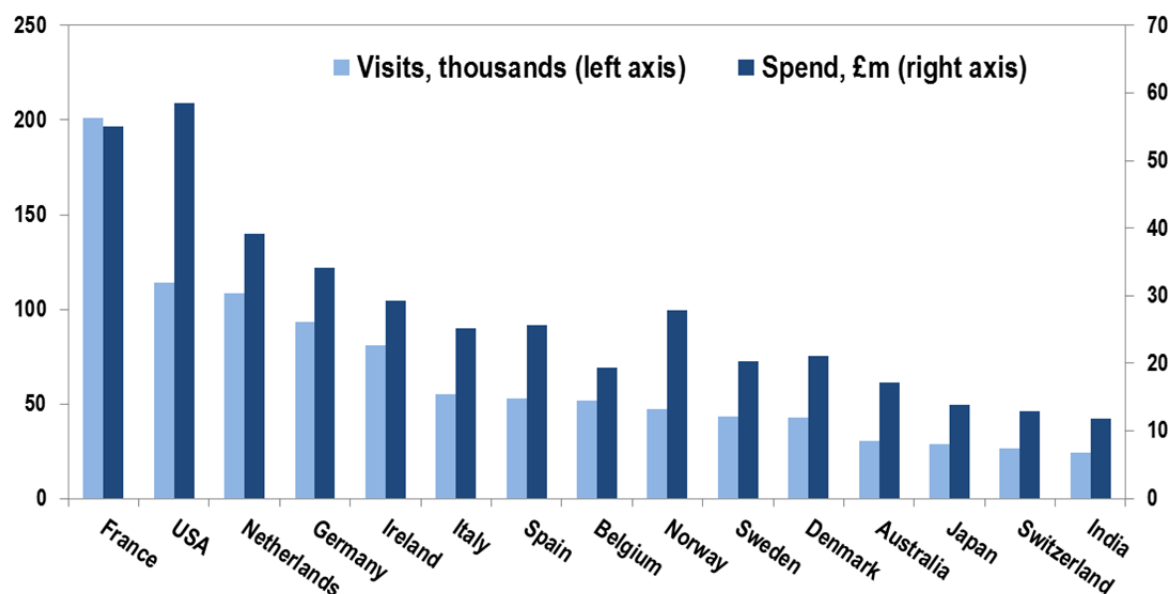
By isolating the relevant sub-sections within the IPS dataset (that is, those leisure visitors who undertook arts and cultural and no more than two other activities), we can examine some of the features of tourists for whom the UK's arts and cultural offering was an important reason for visiting the country. Figure 37 compares spending by tourists of the 15 countries from which arts and cultural visits were greatest in magnitude.⁵²

⁵⁰ Taken as those visitors discussed above, who visited the UK purely for leisure purposes and undertook only activities in the arts and culture, or the arts and culture plus one or two other activities.

⁵¹ Figures may not sum due to rounding.

⁵² The expenditure figures are totals for these visitors' trips to the UK and do not refer exclusively to expenditure on arts and culture. The data is ordered by numbers of visits rather than by spending, which leads to a high ranking for tourists from Saudi Arabia and the Gulf States who are small in their numbers but who spend a lot.

Figure 37: UK visits and spending of international 'arts and culture' leisure tourists by country, 2011

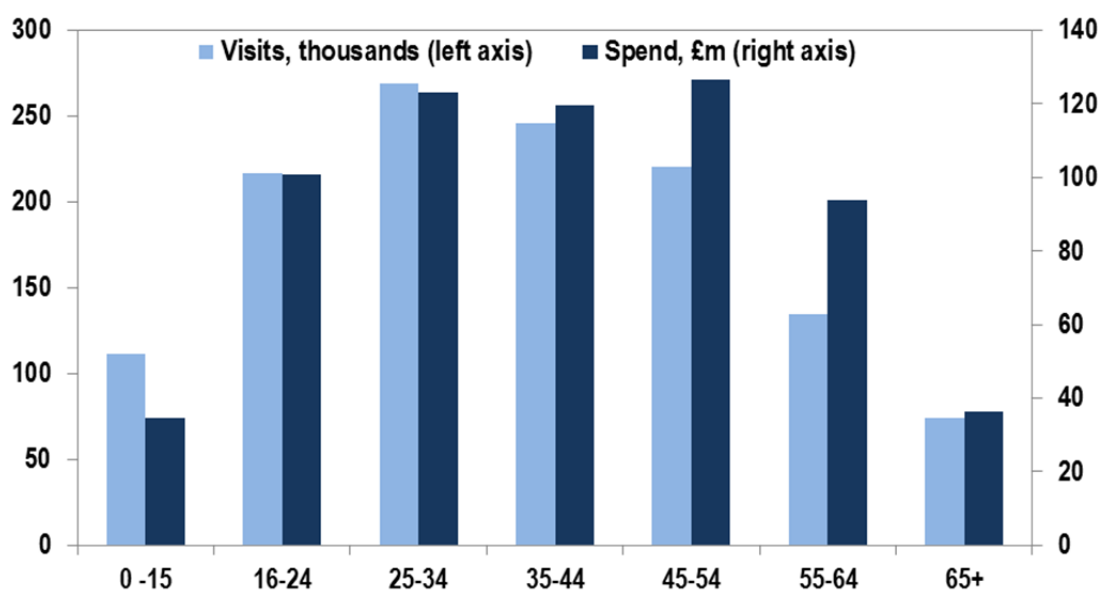


Source: International Passenger Survey 2011, Cebr analysis

This illustrates that, while a large share of the UK's arts and cultural tourists come from a range of European and Scandinavian nations, the UK's arts and cultural activities do draw visitors from much further afield. The United States account for the greatest share of spending in 2011, and significant numbers of visits also arrive from Australia, Japan and India. Looking across the Asian region as a whole, there were 134,000 tourist visits from there to the UK in 2011 due to the arts and cultural offering, contributing £83 million in expenditure during their visit.

We can also examine how tourist activity varies by age. Figure 38 illustrates that visitors to the UK's arts and cultural offerings are drawn from all age groups, with a fairly even distribution of expenditure across adult age groups reflecting this fact also. This demonstrates that the UK's cultural features are not just of interest to particular nationalities or age groups but rather attract a diverse mix of tourists from across the spectrum of human life.

Figure 38: UK visits and spending of international 'arts and culture' tourists by age group, 2011



Source: International Passenger Survey 2011, Cebr analysis

5 The arts and culture's role in developing skills, nurturing innovation and fostering growth in the commercial creative industries

The arts and culture play an important role in supporting commercial creative industries, such as film production, advertising, and design and crafts. Businesses producing creative outputs face specific problems around intellectual property management and raising finance. These industries are largely made up of self-employed individuals, who often lack experience to resolve these problems.⁵³ Such fragmented industries that consist of many small firms also struggle to coordinate training provision to ensure that future skills requirements are met.

The arts and culture industry consumes many of the outputs of these creative businesses, from website design to freelance artists, sound engineers and directors, to crafts sold in gallery and museum shops. Organisations in the arts and culture industry thus indirectly contribute to employment in these creative industries. Many arts and cultural organisations also provide the aforementioned types of support to the businesses they interact with in their day-to-day activities. Some arts and cultural organisations even contribute to the training of future creative employees, providing a workforce for their own industry as well as for the commercial creative industries.

This section, and those that follow it, draw upon a variety of data sources. Specifically, we draw on existing research and support this with case studies drawn from the survey and in-depth interviews carried out as part of this study. We begin with an examination of the importance of the commercial creative industries before examining supply chain links with the arts and culture. The remaining subsections consider a range of other spillover impacts of the arts and culture on the commercial creative industries.

5.1 The importance of the commercial creative industries

Businesses using creative talent for commercial purposes are an important part of the UK's modern economy. The creative industries were responsible for nearly 10 per cent of UK GDP and 4.7 per cent of UK employment in 2010.⁵⁴ They are also an important source of UK exports – accounting for nearly 11 per cent of all exports of services from the UK in 2009.⁵⁵ Export generation has particularly valuable multiplier impacts in the current economic context, implying that the creative industries can play a major role in the UK's economic recovery in the aftermath of the financial crisis.

⁵³ According to our analysis of the 2011 Business Population Estimates, between 90 and 94 per cent of businesses in the creative industries – which, as defined by the Department for Business, Innovation and Skills includes motion picture, video and television programme production, sound recording and music publishing activities, and creative, arts and entertainment activities – were self-employed individuals.

⁵⁴ Bakhshi, H., I. Hargreaves and J. Mateos-Garcia (2013), *A Manifesto for the Creative Industries*, Nesta. This report defines creative industries on the basis of the proportion of workers undertaking creative tasks. The 'commercial creative industries' include, according to this Bakhshi et al (2013) definition, advertising, architecture, art and antiques, crafts, design, designer fashion, film, video games and other leisure computer software, publishing, television, music, the performing arts, software and computer services and radio. The DCMS definition of creative industries is the result of a similar process and uses broadly the same set of industries. But there are differences in the SIC codes included under the software industry which leads to differences between the GVA and employment estimates produced for the commercial creative industries using these alternative definitions.

⁵⁵ DCMS (2011), Creative Industries Economic Estimates, Full Statistical Release.

Developing strong, competitive creative industries should be a priority for the UK. The government has recognised the valuable contribution made by these industries to the UK economy.⁵⁶ Support through policies such as tax relief for video game production and animation, contributions to the Skills Investment Fund, promotion of British creative industries abroad and domestically and the setting up of the Creative Industries Council to provide dialogue between government and industry is further evidence of this recognition.⁵⁷ Developing strong, competitive creative industries is a priority for the UK.

The commercial creative industries have a fragmented market structure, ranging from large TV and film producers, through mid-sized design, fashion, publishing and advertising agencies, to small video game and other software companies, right down to any individual who attempts to sell their work to support themselves through a creative micro commercial enterprise. These businesses involving one or a few individuals are, indeed, the ones most likely to place the greatest value on the support that the arts and culture can offer, largely in terms of business development support and employment creation.

The arts and cultural institutions that are the subject of this report are a key part of the creative industries and play an important role in supporting the other creative industries.

5.2 Supply-chain links with the arts and culture

The evidence from the in-depth interviews with Arts Council-funded NPOs and NMDC member museums carried out as part of our study demonstrates the apparent breadth of the links between the arts and culture and the commercial creative industries. Some examples include:

- theatre groups working directly with the BBC and other commercial organisations, providing content for radio and television programmes⁵⁸
- museums offering their archives of footage for television and film production⁵⁹
- newly-written theatrical or operatic work being published in some format⁶⁰
- the arts and culture providing important markets for software designers, advertising agencies, and graphic designers, often commissioning websites and other media campaigns from such specialist businesses⁶¹
- the arts and culture using architects to design their workspaces or when building new venues⁶²

⁵⁶ See Ed Vaizey MP, Minister for Culture, Communications and the Creative Industries, Speech to the Local Government Association Conference, 7 March 2013 and Speech to the Oxford Media Convention 25 January 2012, transcript at <http://www.guardian.co.uk/oxfordmediaconvention/ed-vaizey-the-future-of-britain-s-creative-industries>.

⁵⁷ Department for Culture, Media and Sport (February 2013), *Making it easier for the media and creative industries to grow, while protecting the interests of citizens*. See <https://www.gov.uk/government/policies/making-it-easier-for-the-media-and-creative-industries-to-grow-while-protecting-the-interests-of-citizens>.

⁵⁸ Cebr interview with Graeae Theatre Company, March 2013; Cebr interview with Sheffield Theatres Trust, March 2013.

⁵⁹ Cebr interview with Imperial War Museums, February 2013; Cebr interview with National Museums Wales, March 2013.

⁶⁰ ⁶⁰ Cebr interview with Graeae Theatre Company, March 2013; Cebr interview with The Opera Group, March 2013; Cebr interview with English Touring Theatre, March 2013; Cebr interview with Sheffield Theatres Trust, March 2013.

⁶¹ Cebr interview with The Hepworth Wakefield, April 2013; Cebr interview with National Museums Wales, March 2013; Cebr interview with Whitechapel Gallery, April 2013; Cebr interview with Sheffield Theatres Trust, March 2013; Cebr interview with Cheshire Rural Touring Arts, March 2013.

- theatre and opera groups regularly commissioning composers⁶³
- galleries and visual arts venues commissioning specific pieces from artists such as, for example, from the sculptors commissioned by the Opera Group as part of their Incubator project⁶⁴ to The Unilever Series in the Turbine Hall, Tate⁶⁵
- museums and galleries regularly commissioning a variety of artists to provide responses to their collections in the form of music, drama, dance, art or film, as part of exhibitions⁶⁶

These links appear to work in both directions, with both being reliant on each other. This is reflected in the supply chain of the arts and culture industry, as represented in Table 13 below. This is the same supply chain as highlighted in section 3.1 but here expenditure on different industries, which can be attributed directly to expenditure on the creative industries, is shown separately.⁶⁷

Table 13: Creative industries in the arts and culture supply chain, 2010 £ millions

Sector	Intermediate expenditure by the arts and culture	Creative industry expenditure	Percentage of expenditure category that is creative industry
Information and communication	1,583	1,047.0	66.1%
Manufacturing	1,526	-	-
Administrative and support service activities	1,351	-	-
Arts, entertainment and recreation	1,300	785.4	60.4%
Professional, scientific and technical activities	1,068	397.5	37.2%
Electricity, gas, steam and air-conditioning supply	358	-	-
Transportation and storage	316	-	-
Construction	308	-	-
Financial and insurance activities	171	-	-
Real estate activities	119	-	-

⁶² Cebr interview with Graeae Theatre Company, March 2013; Cebr interview with English Touring Theatre, March 2013; Cebr interview with The Hepworth Wakefield, April 2013; Cebr interview with National Museums Wales, March 2013; Cebr interview with Tate, March 2013.

⁶³ Cebr interview with Graeae Theatre Company, March 2013; Cebr interview with The Opera Group, March 2013, Cebr interview with Sheffield Theatres Trust, March 2013.

⁶⁴ Cebr interview with The Opera Group, March 2013.

⁶⁵ Cebr interview with Tate, March 2013.

⁶⁶ Cebr interview with Tyne and Wear Museums, March 2013; Cebr interview with Whitechapel Gallery, April 2013; Cebr interview with The Hepworth Wakefield, April 2013; Cebr interview with Imperial War Museums, February 2013.

⁶⁷ This is estimated using the definition of creative industries outlined in footnote 53.

Sector	Intermediate expenditure by the arts and culture	Creative industry expenditure	Percentage of expenditure category that is creative industry
Other service activities	106	-	-
Accommodation and food service activities	91	-	-
Wholesale and retail trade, repair of motor vehicles	74	-	-
Education	59	0.2	0.4%
Water supply; sewerage, waste management	36	-	-
Human health and social work activities	34	-	-
Public administration and defence; compulsory social security	18	-	-
Agriculture, forestry and fishing	2	-	-
Mining and quarrying	1	-	-
Total	8,523	2,230.2	26.2%

Source: Cebr analysis

These data show that over a quarter of the arts and culture industry's supply chain is accounted for by the creative industries, representing almost £2.2 billion in 2010. This indicates the closeness of the relationship between the industries, a relationship which was further illustrated through in-depth interviews carried out in the course of our research.

This evidence suggests that the arts and culture industry in the UK is indirectly a significant source of support for jobs in the commercial creative industries. This, along with the indirect impacts through other sectors of the economy and through induced employee spending impacts in the creative and other sectors, is reflected in the direct and multiplier impacts presented in section 3 above.

5.3 The boost to wages and productivity in commercial creative industries from proximity to the arts and culture

Recent evidence suggests that being close to the arts and cultural institutions improves the productivity of workers in creative and cultural occupations. Work by Bakhshi et al (2013)⁶⁸ assesses the impact of cultural clusters on wages while controlling for individual characteristics which can affect wages, such as age, experience and gender and city-level characteristics like population and the proportion of the population who are highly educated.

⁶⁸ Bakhshi, H., Lee, N. and Mateos-Garcia, J. (2013), *Capital of Culture*, Brookings / Nesta, forthcoming.

The paper's findings suggest that workers in cultural and creative occupations earn higher wages in areas where there are strong clusters of the arts and culture. To the extent that relative wage levels are a reflection of worker productivity, the suggestion that workers in the creative industries earn more in areas of high cultural density suggests, in turn, that these workers are also more productive.⁶⁹

This improved productivity may be explained by the diffusion of ideas from the arts and culture to the commercial creative industries. Throsby (2008) models the creative industries as a set of concentric circles.⁷⁰ The arts and culture institutions sit in the core of this model, and Throsby's hypothesis is that they provide innovative content and ideas to the commercial creative industries sitting in the rings around this core. Those industries with the strongest artistic and cultural content, such as film, television, publishing and video games, lie in the ring directly around the core, while industries with a lower ratio of creative to commercial content lie further away. The innovative content and ideas provided by the core become inputs for the commercial creative industries in the surrounding rings and eventually diffuse through the broader economy.

Throsby argues that access to these ideas inspires workers in commercial creative industries, helping them to create innovative products and to add value. The finding that wages are higher in commercial creative industries in areas of high cultural density relative to those in these same industries in areas with low cultural density provides indicative evidence that ideas do move through the creative economy in this way. Further support for Throsby's model of diffusion is provided by evidence that firms which spend more than average on the products of creative industries tend to have strong innovation performance themselves.⁷¹ There is no certainty, however, that causality runs in this direction – that is, from the arts and culture to commercial creative industries and the wider economy. For instance, the vibrancy of the arts and culture scene in a particular area could be driven by the productivity of creative industries.⁷²

Some things may well be more certain, however, even if not quantifiable, such as the continuous stream of inspiration provided by the arts and culture through new exhibitions and content and the effect that this must have on the productivity of creative industries. Several of the arts and culture organisations interviewed as part of our study discussed the importance of presenting novel and challenging work; in some cases this was seen as their core mission.

While we did not find systematic evidence to confirm the assertion, anecdotal evidence suggests that the arts and culture industry in the UK is a particularly important source of ideas for the creative industries. Many fashion designers, for example, draw upon the Victoria and Albert Museum's archives as a source of inspiration, as discussed in Box 1 below.

⁶⁹ The statistical techniques that would allow this to be demonstrated could not, however, offer any insight into the mechanisms through which workers in commercial creative industries gain productivity through proximity to the arts and culture institutions and activities.

⁷⁰ Throsby, D. (2008), 'The concentric circles model of the cultural industries', *Cultural Trends*, 17(3): 147–164.

⁷¹ Bakhshi, H., McVittie, E. and Simmie, J., (2008), *Creating Innovation: Do the creative industries support innovation in the wider economy?* Nesta.

⁷² The idea here would be that more productive creative workers would demand access to a greater variety in the arts and culture offer.

Box 1: Finding inspiration at the Victoria and Albert Museum

Fashion is worth £20.9 billion a year to the UK economy – 1.7 per cent of total UK GDP.⁷³ Brands such as Burberry, Mulberry, Paul Smith, Stella McCartney and Vivienne Westwood are prized worldwide, while the UK high street is unmatched globally for its innovation and quality.

Many factors contribute to the UK's strength in this area, not least the fame of London Fashion Week and the brilliant fashion education on offer in the UK. It is often recognised, too, that fashions are often cyclical. Designers are inspired by the past, and access to this inspiration from fashion archives and collections, like those held at the Victoria and Albert (V&A) Museum in London is one factor which helps the UK maintain its advantage in this sector.

The V&A archives are a unique resource – one of the biggest textiles and fashion collections in the world, with materials spanning four centuries. The V&A is in the process of creating a dedicated facility for this collection, to be completed in October 2013, which will provide modern storage facilities and improve access to this important collection. The collection can also be accessed online, with a search facility allowing designers to see images and detailed information about each item.

Many designers draw upon these archives for inspiration. For example:

- Fashion designer Erdem drew prints for his Spring/Summer 2013 collection from the V&A's archive and reworked the colour schemes to modernise them.⁷⁴
- Stephen Jones, milliner to celebrity and royalty, spoke of the inspiration he has drawn from the V&A throughout his career when he curated an exhibition there in 2009.⁷⁵
- Vivienne Westwood has often studied examples of historic garments in the V&A's collections in her search for inspiration.⁷⁶
- Anna Sui used prints from the V&A's collections for her spring 2000 collection.⁷⁷

Each of these designers is commercially successful, not just in the UK but further afield. The inspiration provided by the V&A allows these designers to put forward fresh ideas, innovate, and maintain the UK's strength in designer fashion. This, in turn, stimulates activity through the wider fashion industry, particularly the UK's lively retail sector.

Artists freely acknowledge the importance of immersion in the work of other artists as part of their own creative process.⁷⁸ The arts and culture, which provide access to artistic and cultural heritage and facilitate dialogue between artists, are conducive to creative innovation. The importance of this interaction between creative workers is documented in Currid's (2007) study of the economy of New York City.⁷⁹

Throsby's Concentric Circles model also suggests that non-creative businesses may benefit from innovations taking place in the creative industries. Fleming and Erskine (2011) suggest that

⁷³ GVA of the UK fashion industry in 2009, Oxford Economics (2010), *The Value of the UK Fashion Industry*, Report for the British Fashion Council.

⁷⁴ See <http://fashion.telegraph.co.uk/news-features/TMG9915381/The-style-equation-fashion-designers-reveal-their-inspiration.html>, accessed 07/04/2013.

⁷⁵ See <http://www.vam.ac.uk/microsites/hats-anthology/the-exhibition/inspiration.html>, accessed 9/04/2013.

⁷⁶ See Wilcox, C. (2004), "Vivienne Westwood", V&A Publications

⁷⁷ See <http://www.vam.ac.uk/content/articles/f/fashion-in-motion-anna-sui/>, accessed 9/04/2013.

⁷⁸ Oakely, K. et al (2008), "The Art of Innovation: How fine arts graduates contribute to innovation", Nesta.

⁷⁹ Currid, E. (2007), *The Warhol Economy: How Fashion, Art and Music Drive New York City*, Princeton University Press

innovation in the arts and culture that disrupts existing markets by, for example, superseding existing products and making them irrelevant may spur innovation throughout the rest of the economy.⁸⁰ The Royal Opera House's experiments with 3D technology, for example, were groundbreaking in the field of live event capture, which is now fairly common. By 2012, the technology had become mainstream enough for several major events to be broadcast live in 3D, including the opening ceremony of the London 2012 Olympic Games, the Last Night of the Proms and the Wimbledon final. The process of diffusion is likely to take subtle forms, largely through personal contact and extended professional and social networks in cities.

5.4 How public funding boosts artistic innovation

Public funding plays a vital role in encouraging creative innovation. Financial risks go hand-in-hand with innovation: developing new content or methods will almost inevitably entail financial costs, but with completely new ideas it is difficult to determine beforehand whether they will be successful and whether the costs will be recouped. This creates a gap or failure in the market: projects which cannot demonstrate a reasonable likelihood of covering their costs will struggle to secure financial support from commercial lenders.

Public funding is used, as it is in other cases of market failure, to bridge this gap. By taking on risk across a variety of projects, the public purse can support a range of ventures in a way that private supporters who only invest on a small-scale cannot do, despite the expectation that only some will be successful. The publicly funded arts and culture industry commissions significant numbers of new works each year. During financial year 2011-2012, Arts Council England's Regularly Funded Organisations (as they were then called) commissioned 27,913 new works from 14,758 artists in the UK.⁸¹ While only a minority of these projects will eventually enjoy major commercial success, the returns for those that do can be significant. But without the seed funding to get these ambitious projects off the ground, such value might never be realised.

Public funding thus creates a seed-bed for innovation, providing opportunities to explore the potential of new ideas and removing the pressure for new products to always be commercially successful. By the nature of innovation, not all ideas will succeed but the evidence suggests that this funding works. Specifically, a recent survey of theatre workers found that subsidised theatre is widely held to be more conducive to innovative and challenging work.⁸² Such challenging, innovative work developed through publicly-funded culture institutions can, in some cases, go on to great commercial success, as the case study in Box 2 illustrates.

Box 2: War Horse – innovative theatre, commercial success

The National Theatre has a track record of creating work which goes on to commercial success. Its production of *War Horse*, which is based on a novel by Michael Morpurgo, has gone on to worldwide success, despite the author's initial misgivings about the project. With the story originally told from the horse's perspective, Morpurgo could not see how this could be successfully replicated on stage, or imagine how the production

⁸⁰ Fleming and Erskine (2011), *Supporting Growth in the arts economy*, report by Tom Fleming of Creative Consultancy for Arts Council England.

⁸¹ Cebr analysis of Arts Council England's 2012-13 *Regularly Funded Organisation Survey*.

⁸² Albert, A, Mitchell, S, Smithies R and Bakhshi, H (Forthcoming), 'Publicly-funded arts as an R&D lab for the creative industries: a survey of theatre careers in the UK',

Box 2: War Horse – innovative theatre, commercial success

team's suggestion of life-sized puppets – inspired by puppetry on show in Battersea Arts Centre's production of *Faustus in Africa!* – would work.⁸³ With the support of the National Theatre, however, these innovative production techniques were made possible, and the end result has been wildly successful.

The production has moved from its second home at the National Theatre to a commercial theatre in London's West End, and had sell-out runs on Broadway, where it won five Tony Awards. It is touring the US through 2013, and productions are scheduled for Berlin and Australia. The play has now been seen by more than two million people across the world, and broke the record for highest weekly gross takings for a play in the West End.⁸⁴ The play also led to a film adaptation of the novel, released in 2011, directed by Steven Spielberg and shot entirely in England. This box-office success went on to be nominated for six Academy Awards, two Golden Globes and five BAFTAs.⁸⁵

Similarly, many visual artists who receive initial exposure from publicly supported organisations in the arts and culture industry go on to commercial success. By supporting the development of ideas that are too risky to be palatable to the private sector, the arts and culture institutions provide a valuable source of support for creative talent and allow profitable creative projects to come to fruition.

5.5 Arts and cultural organisations as incubators for creative talent

The arts and culture are important for the development of creative talent. Artists, actors, musicians and dancers at the start of their careers are given opportunities to create or perform and are exposed to the best talent of experienced artists. The exposure they are given through these organisations leads, in some cases, to individual artists gaining further work, as in the examples in Box 3 below.

Box 3: Developing artists' careers

Mick Stephenson, a builder from Durham, launched his creative career after exhibiting one of his pieces as part of Artichoke Trust's 2011 LUMIERE festival. Mick won a bursary from Artichoke to develop his work and his finished piece, *Fusion*, sat alongside work by Tracey Emin and other pre-eminent artists. Mick went on to present a solo exhibition, won commissions including one from Durham County Council and has been invited to work with the company again.⁸⁶

The V&A's 2004 exhibition of contemporary lighting, *Brilliant*, kindled relationships between young designers, manufacturers and clients, and proved a valuable launch-pad for some participants, like Sharon Marston, who

⁸³ Michael Morpurgo, The Guardian, 21 August 2010, <http://www.guardian.co.uk/culture/2010/aug/21/michael-morpurgo-on-stage-adaptations>, accessed 10/04/2013.

⁸⁴ Birmingham Post, 5 October 2012, www.birminghampost.net/life-leisure-birmingham-guide/birmingham-culture/theatre-in-birmingham/2012/10/05/how-war-horse-was-inspired-by-a-birmingham-boy-with-a-stammer-65233-31958586/, accessed 10/04/2013.

⁸⁵ See http://uk.imdb.com/title/tt1568911/awards?ref=tt_awd, accessed 17/04/2013.

⁸⁶ Cebr interview with Artichoke Trust, March 2013; <http://lumierebrilliant2013.wordpress.com/>, accessed 17/04/2013; <http://www.kyeo.tv/2013/02/18/preview-mick-stephensos-art-in-the-arch/>, accessed 12/04/2013.

estimated that the exhibition directly led to commissions which kept her in work for two years.

Vane, a contemporary arts organisation based in Newcastle-upon-Tyne, showcases the work of British artists at industry fairs in New York, providing artists with access to international markets. Jock Mooney, for example, received Vane support to exhibit in the USA.⁸⁷

The arts and culture showcase the UK's creative talent overseas. Many of the UK's arts and culture organisations tour shows or exhibitions abroad. For example, the Natural History Museum's exhibitions have been shown in more than 65 countries,⁸⁸ while English Touring Theatre recently opened a production in Australia⁸⁹ and Vane, an arts organisation based in Newcastle-upon-Tyne, regularly shows works by new artists at a major trade show in New York.⁹⁰

Each of these activities is an arts and culture export, resulting in a flow of income to the UK. By touring their work abroad, the UK's major arts and culture institutions establish strong international reputations. By demonstrating the quality of the UK's artistic and cultural output, they can spur further demand for the UK's artistic products. The support of UK arts and cultural organisations, acting as internationally-recognised brands, can then act as a guarantee of quality for new artistic work from the UK, thereby helping artists to attract international attention.

Creative talent is at the centre of the UK's success in the arts and culture. Commercial creative industries, however, require many skills besides artistic and cultural talent and the UK's arts and culture organisations play a crucial role in developing this talent too.

While few systematic data are available on the career paths of workers within the creative industries, research into the career paths of theatre workers finds that 35 per cent have worked in both the subsidised and the commercial sectors over the course of their career. Of these individuals, 62 per cent thought that working in subsidised theatre was very important for the development of a successful theatre career, particularly because it gives time to experiment and the opportunity to present challenging work.

Career breakthroughs were also more likely to occur in subsidised theatres. This suggests that the publicly subsidised theatre environment is particularly conducive to skills development.⁹¹ These patterns are likely to hold across other art forms, with the public realm giving artists the space to explore.

Career movements between the theatre and other creative industries are also common. Of those individuals who have worked in the theatre, 66 per cent have also worked on another art form, such as writing or music, while 51 per cent have worked in another creative industry, particularly film, TV or advertising. Creative backstage, technical and stage management skills can all be used in multiple industries and many of those who develop these in subsidised theatres will go on to use them

⁸⁷ Cebr interview with Vane, March 2013.

⁸⁸ See <http://www.nhm.ac.uk/business-centre/touring-exhibitions/index.html>, accessed 10 April 2013.

⁸⁹ Cebr interview with English Touring Theatre, March 2013.

⁹⁰ Cebr interview with Vane, March 2013.

⁹¹ See footnote 82. In a survey of 1,042 people who had worked in both subsidised and commercial theatre, 62 per cent rated experience in a subsidised theatre as 4 or 5 on a scale of importance where 1 was not at all important and 5 was absolutely critical.

elsewhere.⁹² Thus, work placements and trainee schemes in the arts and culture can help provide the skilled labour inputs that the UK's creative industries need to flourish.

Nearly three-quarters (74.4 per cent) of the arts and culture organisations that receive regular funding from Arts Council England provide some sort of work experience, apprenticeship or internship.⁹³ The breakdown of these is illustrated in Table 14 below.

Table 14: Arts and cultural organisations that offer work experience, apprenticeships or internships

Type of activity	Percentage of regularly funded organisations offering this
Work Experience	44.3%
Higher Education Placement	39.9%
Diploma	1.3%
Intern	44.7%
Creative Apprenticeship	11.1%
Other Apprenticeship	7.5%
Any	74.4%

Source: Arts Council England survey of Regularly Funded Organisations 2011/12, Cebr analysis

Placements in the arts and culture such as these would appear to have an impact on the employment prospects of graduates of creative subjects. In a survey of 3,500 people who had graduated in a creative subject in the last six years, Bell, Pollard and Stanley (2010) find that having undertaken a placement had a significant effect on both the likelihood of employment and on the type of employment. Their results are summarised in Table 15 below.

Table 15: Effects of work placements on employment prospects for creative graduates

	Employed	Employed in creative industry
Placement	61%	81%
No placement	56%	74%

Source: Bell, Pollard and Stanley (2010)

Placements allow graduates to develop the skills required to work in a creative industry and thus help to further unlock the benefits of their education.

Creative Apprenticeships are another important route into the sector. These apprenticeships, which are open to 16- to 24-year-olds, combine vocational and academic elements. Young people who

⁹² See footnote 82.

⁹³ Cebr analysis of Arts Council England's 2012-13 "Regularly Funded Organisation Survey".

complete a Creative Apprenticeship benefit from a wage premium of between four and 18 per cent over a lifetime, with advanced-level apprenticeships bringing even higher returns.⁹⁴ Furthermore, over 60 per cent of creative apprentices were found to have stayed with their employer after completing their training and almost 90 per cent either remained with their employer or gained employment with another company in the industry.

Creative apprentices also cost less than others to recruit – zero when they are kept on by their employer, and around 30 per cent lower when they move to another employer in the industry. Through skills acquired and reduced recruitment costs, it is estimated that the 2011-12 cohort of 210 apprentices will deliver net gains of £2.4 million to the UK economy over the next decade.⁹⁵ Box 4 describes how the work experience and training opportunities provided by one organisation benefit both the young people taking part and the organisation itself.

Box 4: Creative apprenticeships and trainee programmes at Whitechapel Gallery⁹⁶

Whitechapel Gallery offers a range of work experience and training opportunities, from internships to apprenticeships, via a Heritage Lottery Funded trainee scheme. This enables it to offer opportunities to the broadest possible range of people. Through 2011-12 they supported three creative apprenticeships, six trainees and 31 interns.

Interns work across a whole range of departments within the gallery, including exhibitions, communications, development, education, events and publications. They work part time for the organisation for three months, and are unpaid. The Gallery used to make much greater use of interns, but has diversified its work-experience offer in recent years to allow a more diverse group of people to benefit.

Apprenticeships, in contrast to internships, are specifically for non-graduates. As they are paid, they are also accessible to those who are not able to afford to undertake an unpaid internship. Many departments across the gallery have taken apprentices, including operations, education, finance and visitor services. Apprentices spend four days a week at the Gallery, and a fifth day at the local college studying for an NVQ.

When the Gallery first started offering apprenticeships in 2010 they were worried that the apprentices would be a drain on resources. Over time, however, they have found that, on the contrary, apprentices can be a very valuable resource and they even keep some on at the end of their training period as full-time staff. The Gallery was recognised in 2013 as a Creative Apprentice Employer of the Year, and was praised for giving young people not just the skills to forge their careers, but also confidence. The Gallery's alumni now speak at events and conferences, sharing their experiences.

The Gallery also offers six Heritage Lottery Fund traineeships a year. These paid placements focus on retaining heritage skills in the sector through work-based learning and accredited training. Trainees are taught by the heads of departments, with an emphasis on collaboration with other cultural organisations, to give a broad view of the industry. This programme appears to be a remarkable success story, with every single trainee having successfully found work in a creative organisation on completion of their programme.

⁹⁴ Beaven, R., May-Gillings, M., Wilson, R., Bosworth, D. (2011), *Measuring the Economic Impact of Further Education*, Department for Business Innovation and Skills

⁹⁵ Baker Tilly, (2011), *Creative Apprenticeships: Assessing the return on investment, evaluation and impact*, Creative and Cultural Skills.

⁹⁶ Based on Cebr's in-depth interview with Whitechapel Gallery, April 2013.

The Creative employment programme fund will dramatically increase the number of apprenticeships and paid internships available across the arts and culture industry, funding up to 6,500 placements between December 2012 and March 2015. This will make these placements available to a much wider range of young people, and enable growth of the creative industries by addressing skills shortages.

5.6 The arts and culture's role in supporting commercial creative endeavour

Besides providing inspiration to creative professionals, the arts and culture industry also provides business support to new commercial creative enterprises. All new businesses face challenges, but some are particularly problematic for businesses whose output is creative. The biggest reported obstacle to creative entrepreneurs is lack of funds.⁹⁷ Because many of creative businesses depend on intangible assets – ideas, rather than objects – obtaining credit can be difficult. The nature of the products being developed also makes management of intellectual property ownership particularly important, but many new businesses struggle to ensure distribution and exclusivity contracts are adequate and fair. Where business skills are lacking in commercial creative industries, entrepreneurs need support to harness the potential of their ideas.

The Creative Industry Finance programme was launched by the Arts Council in response to these problems. This offers business development support and access to finance to creative industry enterprises and should provide access to finance for small and medium enterprises who might otherwise struggle to attract private funding. This seed funding can be used to develop assets, especially intellectual property, and will allow firms to develop a lending history, improving the chances that they will be able to find further finance from the private sector in the future. The programme will also offer business skills training in the form of one-to-one business development support sessions with a specialist advisor. This will help micro-enterprises to develop the skills they need successfully to market their creative talents.

Fragmentation in creative industries has also been recognised as a problem⁹⁸, with the lack of communication between individual artists leading to a failure to capitalise on the dynamism of the creative sector. By providing mentoring, opportunities to network, low-cost work space and advice about intellectual property and business issues to commercial creative businesses, the arts and culture industry can make a vital contribution to the development of the sector.

Participating in collective activities such as arts festivals and exhibitions can improve the skills and knowledge of practitioners and help them develop professional networks. As much innovation in the commercial creative industries is 'soft' (unobservable or at least less observable than tangible products), networking is likely to be a key source of innovation. More than a fifth of creative businesses in the Community Innovation Survey report that they have formed innovation co-operation agreements with other firms that take part in the survey, nearly twice as many as in other industries.⁹⁹ Networking also helps to spread knowledge of opportunities and available resources, helping micro-businesses in the sector to coordinate their activities.

This evidence is not surprising given that a variety of studies have already established that commercial creative industries have a tendency to cluster,¹⁰⁰ which should facilitate networking. The

⁹⁷ HKU (2010), *The Entrepreneurial Dimension of the Cultural and Creative Industries*, Hogeschool vor de Kunsten, Utrecht.

⁹⁸ Annabel Jackson Associates Ltd (2011), *Turning Point Network Final Evaluation Report*, For Arts Council England.

⁹⁹ Miles, I. and Green, L. (2008), *Hidden Innovation in the Creative Industries*, Nesta.

¹⁰⁰ Chaplain et al, (2010), *Creative clusters and innovation: Putting creativity on the map*, Nesta.

arts and culture institutions can help creative businesses develop these vital networks by providing meeting spaces and opportunities, either physically or online, for artists and entrepreneurs to meet. Box 5 describes how some of the organisations interviewed for this project are providing networking opportunities.

Box 5: The arts and culture industry facilitating networking opportunities for creative industry entrepreneurs

Writing West Midlands holds two networking conferences and six writer networking events every year, providing opportunities for writers to meet and discuss ways to commercialise their work.¹⁰¹

The Hepworth Wakefield organises Get Interconnected – a networking event for artists, designers and creative professionals, held every three months. Each event features a selection of quick-fire presentations, followed by a chance to network and enjoy the gallery.¹⁰²

Some organisations are also able to provide low-cost space to commercial creative start-ups. Given that many commercial creative industries struggle with access to finance, low-rent office space is an important form of support.

Furthermore, where office space is provided to creative businesses that work in a similar area to the host organisation, there is the potential for the host to offer other forms of informal support to the creative business. For instance, the networking benefits described above mean that creative businesses benefit from being located near other creative businesses. Where the arts and culture industry is able to offer space to more than one creative business, this would extend the reach and proportionate scale of the networking benefits. Box 6 describes how some arts and cultural organisations have supported creative businesses in this way.

Box 6: Organisations in the arts and culture creating space for creative businesses

Showroom, a creative centre in Sheffield, houses Workstation, a space where small and medium creative enterprises can rent office space with high-speed internet access, meeting facilities and exhibition space. Business support, like IT services, HR and legal advice is also offered, creating an environment where creative start-up businesses can flourish. This space has proved enormously popular with start-ups in the creative and digital industries, and is currently home to over 60 businesses.¹⁰³

Vane, a contemporary arts organisation based in Newcastle-upon-Tyne, led the redevelopment of a building previously listed for demolition, which now provides space to six other arts organisations. While they do not offer a programme of formal support to these ventures, the presence of an established arts organisation in the building provides a well of experience for other ventures to draw on.¹⁰⁴

Informal mentoring of this kind appears to be common throughout the arts and culture ecosystem, with several other organisations we contacted offering space to other creative organisations through similar arrangements. Other organisations offer more formal mentoring to creative businesses, as in the case studies in Box 7.

¹⁰¹ Writing West Midlands survey return, received by Cebr February 2013.

¹⁰² Based on Cebr's in-depth interview with The Hepworth Wakefield, April 2013.

¹⁰³ See <http://www.showroomworkstation.org.uk/workstation/>, accessed 17 April 2013.

¹⁰⁴ Based on Cebr's in-depth interview with Vane, March 2013.

Box 7: Mentoring by the arts and culture industry of commercial creative businesses

London's Southbank Centre supported the early work of Hide&Seek, an organisation that produces 'social games and playful experiences'. Southbank Centre supported the creation of the Hide&Seek festival of games in 2007. This has become an annual event, and Hide&Seek has gone on to offer consultancy services to firms including eBay, Nike, Cadbury and CBS, and to support organisations including the BBC.¹⁰⁵

Cheshire Rural Touring Network (CRTN), in association with the Performing Arts Network and Development Agency, provide mentoring to one touring company annually. The company is provided with advice on rural touring, including pricing, artistic content and liaising with coordinators and is given the opportunity to showcase their work at CRTN's annual Promoters Day.¹⁰⁶

The British Library provides support for commercial creative businesses through its Business and Intellectual Property Centre. Launched in 2006, this has offered support to over 300,000 entrepreneurs, with information on intellectual property available alongside advice sessions with experts, workshops and other events.¹⁰⁷

There is no doubt that the provision of this kind of help and support provided by arts and cultural organisations improves the chances that nascent commercial creative businesses will receive recognition and become successful.

¹⁰⁵ Southbank Centre survey return, received by Cebr March 2013. See also <http://www.southbankcentre.co.uk/about-us/resident-orchestras-and-associate-artists/hide-and-seek>, accessed 28 April 2013 and <http://www.hideandseek.net/>, accessed 28 April 2013

¹⁰⁶ Based on Cebr's interview with Cheshire Rural Touring Arts, March 2013.

¹⁰⁷ British Library survey return, received by Cebr February 2013.

6 Spillover impacts of the arts and culture that improve national productivity

Arts and cultural industries, as well as fostering innovation and growth in commercial creative industries, support productivity in the workforce as a whole. Engagement with the arts and culture helps to develop people's critical thinking, to cultivate creative solutions to problems and to encourage effective personal communication and expression. For both adults and children, these skills improve intellectual ability and wellbeing, enabling greater success in day-to-day endeavours. These individual-level benefits, taken in aggregate, represent improvements to the effectiveness and flexibility of the nation's workforce, with positive impacts on productivity.

Although the main direct beneficiaries of artistic and cultural education are the individuals receiving the teaching, the gains are also dispersed to wider groups. Through the mechanisms outlined above, the arts and culture contribute to improved productivity in the economy. Some forms of artistic engagement are particularly good at improving cognitive and interpersonal abilities, particularly long-term partnerships between schools and arts and cultural organisations. Others, such as involvement in universities and other higher education institutions, increase the supply of knowledge, thereby fostering innovation.

In addition, the communication and creative skills afforded by arts and cultural education can be beneficial for organisations' cultures. Diversity of outlook and receptiveness to new ideas create environments conducive to innovation, and facilitate speedier adaptation to technological change. This, in turn, also has positive implications for productivity and growth. This section takes a closer look at these issues.

6.1 Introduction to the spillover benefits of artistic and cultural education

The arts and culture are essential parts of any person's education. They teach intellectual rigour and practical skills as well as allowing young people to express themselves and develop imagination and creativity. Darren Henley, in his review of cultural education in England, refers to:¹⁰⁸

- Knowledge of the arts and culture, which introduces young people to a broad range of ideas and attitudes;
- Development of critical and analytical skills;
- Accumulation of expressive and creative abilities;
- Experience of both collaborative and solo work, and development of the ability to work alone to complete a task;
- Increases in the extent to which young people engage with their education, improving academic attainment across the board; and
- Improvement of cognitive abilities.

Through these mechanisms, arts and cultural education can improve health outcomes, increase social cohesion and reduce crime rates. Artistic education is also important for developing creativity, an essential supporting pillar of the UK's increasingly knowledge-based economy. With the UK's

¹⁰⁸ Henley, D. (2012), "Cultural Education in England: An independent review by Darren Henley for the Department for Culture, Media and Sport", Department for Culture, Media and Sport.

comparative advantage in manufacturing having long been eroded, continual innovation and creativity in knowledge-intensive activities such as ICT, engineering, professional services and R&D are imperative to maintain growth. Creative skills are just as important as technical and scientific skills in driving innovation in these digital industries.¹⁰⁹ Education, such as that gained through or from the arts and culture, fosters this creativity and will continue to make vital contributions to maintaining the prosperity of the UK.

Yet these benefits are not straightforwardly measurable. They will only be experienced in the long-term through relative improvements in productivity and competitiveness and, in this sense, the contribution of the arts and culture is difficult to disentangle from those of the rest of the curriculum. There are, however, two areas where the tangible benefits of artistic and cultural education are demonstrable. These are academic attainment and transferable skills.

6.2 The effects of artistic and cultural education on academic attainment and the development of transferable skills

A recent systematic review of relevant academic literature found broad evidence that childhood participation in artistic and cultural activities improved cognitive and transferable skills. Communication and social skills were boosted by between 10 and 19 per cent in standardised tests, while scores on standardised academic attainment tests improved by between one and two per cent.¹¹⁰

This is corroborated by the American National Educational Longitudinal Survey, which found that children who had significant involvement with the arts performed better in standardised tests and stayed in school for longer.¹¹¹ Evidence suggests that different arts have different benefits; while music, for example, is associated with improvements in mathematical ability, drama was found to improve reading and boost confidence.¹¹²

Improvements in cognitive ability can feed through to higher wages later in life. Econometric studies, which isolate the relationship between wages and test scores by holding constant other factors which may affect wages and test scores, show that higher cognitive test scores at age 10 are associated with higher weekly earnings at the ages of 30, 34 and 38.¹¹³

Further evidence from the US suggests that involvement with the arts directly increases the likelihood that children from low income families will achieve a university degree. Catterall (2009)

¹⁰⁹ See <http://www.newscientist.com/blogs/culturelab/2012/08/john-maeda-steam.html>, accessed 28 April 2013.

¹¹⁰ CASE, (2010), *Understanding the value of engagement in culture and sport*, summary report.

¹¹¹ Frontier Economics (2007), *A framework for evaluating cultural policy investment*, Report prepared for DCMS.

¹¹² Fiske, E. (ed.) (1999), *Champions of Change: The impact of the arts on learning*, The Arts Education Partnership and President's Committee on the Arts and the Humanities. This report analyses data from the National Educational Longitudinal Survey, which looks at the academic results of 25,000 students over 10 years.

¹¹³ Crawford, C. and Cribb, J. (2013), 'Reading and maths skills at age 10 and earnings later in life: a brief analysis using the British Cohort Study', *Centre for Analysis of Youth Transitions Impact Study: REPO3*. Using data from the British Cohort Study, Crawford and Cribb estimate how differences in maths and reading scores at the age of 10 affect earnings later in life. After controlling for a rich set of family and demographic characteristics, they find that a one standard deviation increase in reading scores at age 10 is associated with earnings of between 4.4 and 4.8 per cent more at age 30. A one standard deviation increase in maths scores at age 10 is associated with an increase in earnings at age 30 of between 10.2 and 10.8 per cent. This is supported by Carneiro, P., Crawford, C. and Goodman, A. (2006), *Which Skills Matter?*, Centre for the Economics of Education. Using similar methods and the same dataset, this paper finds that a one standard deviation increase in cognitive ability at age 11 is associated with a 10 per cent increase in hourly wages at age 42.

finds that having a high level of arts involvement nearly tripled the probability that students from low socio-economic backgrounds would achieve undergraduate degrees.¹¹⁴

Arts and cultural education has, evidence suggests, the most significant effect on academic attainment when engagement is long-term. The arts and culture industry can thus maximise its educational impact by developing relationships with schools. The Creative Partnerships programme in the UK created long-term relationships between schools and creative professionals, reaching 1.7 million children across 5,324 schools between 2002 and 2011.¹¹⁵ Those children who took part in the programme were found to have out-performed the national average at both Key Stage 3 and 4, despite participating schools mostly being in economically deprived areas,¹¹⁶ while their performance at GCSE exceeded those of similar young people at other schools by 2.5 grades.¹¹⁷

As part of these partnerships, arts and cultural organisations have not just offered teaching in the arts and culture to schools but, through a deeper, prolonged period of engagement, have challenged and changed the way teachers teach. Creative practitioners often, as non-teaching professionals, have different expectations of children and young people, who tend to respond positively to the challenge of high expectations. Young people learn to take risks, take responsibility and work in teams.

Behaviour and attendance also improved among schoolchildren taking part in these programmes. Exclusions of children for bad behaviour in both primary and secondary schools were lower after two years of Creative Partnerships. Those children who are excluded are more likely to leave school without any academic qualifications, so reducing the prevalence of such exclusions indicates a sizeable additional benefit of long-term partnerships between schools and the arts and culture industry.

Partnerships such as this offer young people a role in leading and shaping their own lives and activities, allowing them to take responsibility for their own learning. Schools can thus improve outcomes by strengthening pupils' engagement with education through the arts and culture, supporting continued study and attainment of qualifications where a student may otherwise have dropped out. This, in turn, improves access to employment and enables a greater proportion of pupils to become productive members of society. Additional benefits to society are also accrued through reduced crime and anti-social behaviour associated with truanting and exclusion.

Despite the Creative Partnerships programme having now ended, many arts and cultural organisations continue to develop links with the education system independently. Ten NPOs have been designated Bridge Organisations, tasked with building and facilitating networks across the arts, culture and education.

Cebr's survey and interview evidence also reveals that many arts and cultural organisations, both large and small, have independently organised at least one similar long-term partnership with a local school. These relationships, some of which are outlined in Box 8 below, can be expected to have positive education impacts, including:

¹¹⁴ Catterall, J. (2009), *Doing Well and Doing Good by Doing Art*, Los Angeles. Catterall finds that 17.7 per cent of children with high arts involvement from low socio-economic backgrounds go on to get a BA by the age of 26, compared to 6.3 per cent of children from the same background with low arts involvement.

¹¹⁵ Creativity, Culture and Education figures, 18/03/2013.

¹¹⁶ Kendall, L., Morrison, J., Sharp, C. and Yeshanew, T., (2008), *The longer-term impact of Creative Partnerships on the attainment of young people: Results from 2005 and 2006*, NFER – analysis of 13,000 young people who participated in the Creative Partnerships programme, controlling for prior attainment, ethnicity, and economic background.

¹¹⁷ *Ibid.*

- Improved academic attainment
- Improved engagement with teaching across the curriculum
- Better behaviour and fewer fixed term exclusions
- Students taking responsibility for learning, taking risks and working in teams
- Teachers growing in confidence in their use of creative teaching methods across the curriculum

Box 8: Selected examples of arts and cultural educational partnerships

- National Museums Wales works with schools across the nation, most recently through the *Bling* project, which gave young people the opportunity to explore how precious metals are used to express status, image and taste.
- The British Library has an ongoing partnership with Regent High School, through its Young Researchers programme, helping young people to engage with the library's collections through creative projects.
- Graeae Theatre Company has a strong partnership with several primary schools in the area and with Hackney Community College. One recent project invited schools to design their own games for an inter-school event held around the London 2012 Olympic and Paralympic Games.
- Imperial War Museums works with local schools on their Young Reporters programme, which gives secondary school students the chance to record the changes taking place in the museum. Local schools have also been involved in the development of their World War I centenary programme.
- The Hepworth Wakefield delivers an educational programme to four schools from priority areas in the neighbourhood.

Arts and cultural education is also associated with improvements in transferable skills, which bring benefits later in life. Better communication and social skills at age 11 increased the chances that young people would remain in school after 16,¹¹⁸ as well as improving the likelihood that they are in employment at age 42.¹¹⁹

There is further evidence that greater transferable skills gained through arts and culture-related education improves employment prospects in the short-term. For instance, a study of Scottish young people who left school at 16 found that students of arts subjects were more likely to be in employment three years later than those who did not study the arts, as illustrated in Table 16.

Table 16: Employment prospects for school leavers

Subjects studied before leaving school at 16	Probability of employment at age 19
Average young person	61.2%
At least one arts subject	64.7%
At least two arts subjects	70.1%

¹¹⁸ Carneiro, P., Crawford, C. and Goodman, A. (2006), *Which Skills Matter?*, Centre for the Economics of Education. After controlling for cognitive ability and family background, a one unit increase in the standard deviation of social maladjustment at 11 is associated with a 3.3 per cent reduction in the likelihood of staying on at school after 16.

¹¹⁹ *Ibid.* A one standard deviation increase in social maladjustment score at age 11 reduces probability of employment at age 42 by three percentage points.

Subjects studied before leaving school at 16	Probability of employment at age 19
At least two science subjects	62.1%
At least two business subjects	63.3%
At least three language subjects	62.4%

Source: Adapted from DTZ Consulting & Research (2006)

Children with poorer social skills are also more likely to get into trouble with the police, and are more likely to become teenage parents.¹²⁰ Intensive summer arts programmes for young people at risk of offending have also proven to reduce offending rates.¹²¹ Artistic and cultural education, by improving social and communication skills, can thus improve the prospects of young people in numerous ways.

These measurable behavioural and skills improvements show some of the ways in which artistic and cultural education enables greater participation in and productivity of the workforce. Skill levels and employment prospects are improved for young people progressing into the world of work, with a greater probability that their work will be high-skilled. Education in the arts and culture is thus an important aspect of preparing the future workforce to make the maximum contribution to the UK economy.

6.3 Higher education in arts and cultural subjects

The positive aspects of artistic and cultural education are not only relevant in school education: studying artistic and cultural subjects during higher education also brings productivity and employability benefits. During the 2011-12 academic year, 182,085 students of art and design subjects were enrolled in UK universities.¹²² The qualifications these students obtain will allow them to achieve higher earnings throughout their lives; with the average hourly wage of creative arts graduates coming to £12.06, compared to £8.92 for a non-graduate.¹²³

Graduates in creative arts subjects are thus estimated to enjoy a 35 per cent wage premium over non-graduates over the course of their careers. While the returns from arts degrees are lower than those for some other subjects (with average graduate wages across all subjects standing at £15.18¹²⁴), for many pursuing careers in the arts, the financial benefits are unlikely to be their primary motivation. Hence, looking at the pecuniary returns to an arts degree will give only a partial insight into its economic benefits.

¹²⁰ *ibid.* A one standard deviation increase in social maladjustment score at age 11 is associated with a two percentage point increase in the likelihood of having been in trouble with police by the age of 16 and a two percentage point increase in the likelihood of having a child before the age of 20, controlling for other factors. Improving cognitive test scores also reduced further the likelihood of both these negative social outcomes.

¹²¹ Johnson, H., Keen, S. and Pritchard, D., (2011), *Unlocking value: The economic benefit of the arts in criminal justice*, New Philanthropy Capital. Offending rates for young people involved in the programme fell from 0.09 offences per week to 0.064 offences during the programme, and remained at 0.067 offences a week in the three months after the programme. This is particularly impressive given that offence rates for young people usually rise during summer holidays.

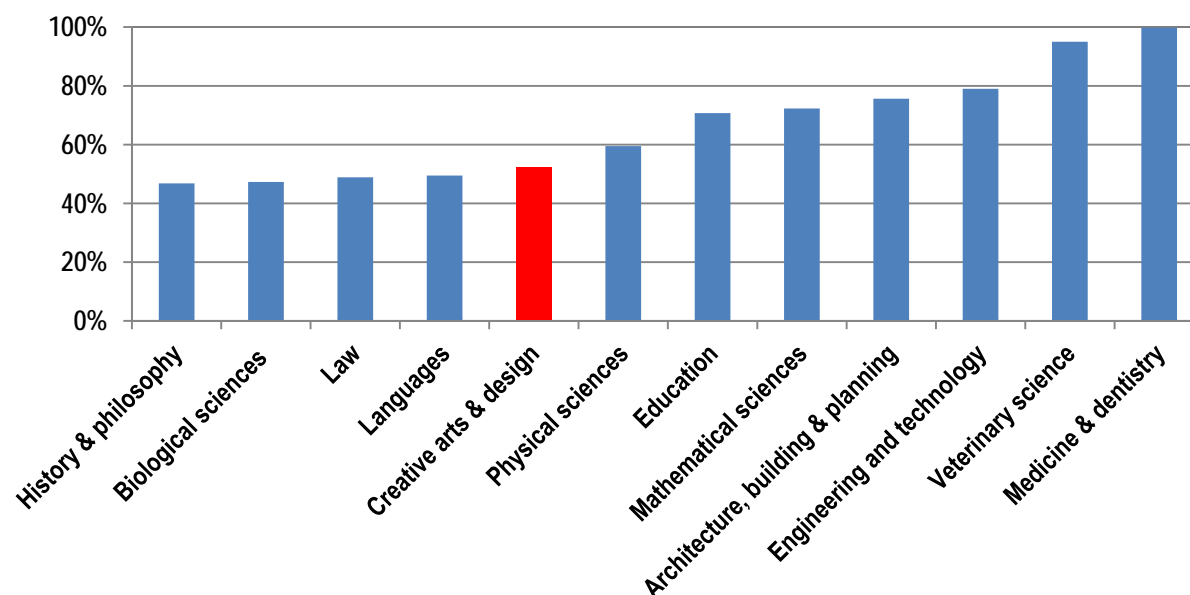
¹²² Higher Education Statistics Agency.

¹²³ ONS Labour Force Survey (2012), *Graduates in the Labour Market Report* and Cebr analysis. Figure is median hourly earnings (four quarter average) of all graduates (21-64 years).

¹²⁴ See previous footnote.

Creative arts degrees do leave graduates relatively well-placed to gain jobs in managerial or professional occupations, with 52 per cent of creative arts and design graduates finding jobs at this level.¹²⁵ While this is lower than the proportion of all graduates who enter employment at this level, it is higher than for many comparable degrees, including law, history and languages, as shown in Figure 39 below.

Figure 39: Percentage of graduates in professional or managerial employment, by degree subject



Source: Higher Education Statistics Agency 2012, Cebr analysis

This illustrates how the capabilities of individuals with creative education are demanded by the labour market in the context of highly-skilled occupations. Research by Nesta¹²⁶ suggests that the skills and attitudes developed by fine arts graduates can help them drive innovation in other sectors of the economy.¹²⁷ An arts degree develops the ability to examine and question the world, to think critically and understand divergent viewpoints – all of which are skills valuable not just in creative industries but in the wider macro economy. Since creative inputs are important not just in the making of art, but also in, for example, design processes for everyday products, it is clear that higher education in artistic subjects imparts the ability to provide a valuable contribution to a wide range of other sectors. Research by Throsby (2006) seems to confirm this: analysis of the incomes of

¹²⁵ This includes managers and senior officials, those in professional occupations and those in associate professional and technical occupations (HESA, 2011).

¹²⁶ This research considered graduates from the University of London and its constituent colleges who studied painting, sculpture, fine art photography, fine art, film and video or combined arts as undergraduates or postgraduates.

¹²⁷ Oakley, K., Sperry, B. and Pratt, A., (2008), *The Art of Innovation: How fine arts graduates contribute to innovation*, Nesta.

Australian artists shows that arts education has a much stronger effect on arts-related income¹²⁸, including teaching, than on income from the artist's original creations.¹²⁹

6.4 The role of the arts and culture in supporting research activities

Many arts and culture organisations also have direct links to higher education institutions. These take many forms: some have recognised research status and work with universities to supervise research degrees, while others offer placements to students on certain courses at nearby universities, or undertake teaching of some modules. Some examples of these activities are given in Box 9 below.

Box 9: Examples of arts and cultural organisations working with universities

- Tyne and Wear Archives and Museums offers placements to about 10 students a year on the Newcastle University Museum Studies masters course.
- Ironbridge Gorge Museums Trust works with the University of Birmingham to offer one of the largest postgraduate courses for heritage management in the UK.
- The Southbank Centre provides teaching to students on King's College London's MA in Education in Cultural Settings.
- Whitechapel Gallery co-delivers an MA in Curating the Contemporary at London Metropolitan University.
- The Natural History Museum has over 100 students in residence at any one time.
- The Imperial War Museum currently hosts four PhD students, and hopes to expand this programme.
- The Opera Group is based at King's College London, where it works closely with students and faculty, including hosting a PhD student.

Data from Arts Council England's survey of NPOs show that in 2011-12, 599 organisations had a relationship of some sort with at least one higher education institution. National museums have established links with 244 UK universities, 52 UK further education colleges and over 80 overseas universities.¹³⁰ Higher education placements numbering 1,499 are offered across 319 arts organisations, representing a valuable opportunity for students to see the professional aspects of the arts they practice.

Many museums have also secured funding from academic research councils, which allows them to jointly supervise PhD students: 14 museums are recognised as academic research institutions equivalent to universities.¹³¹ Many arts and cultural organisations also host students who work towards their research degrees while also contributing to the organisation's operations.

Many arts and cultural organisations also undertake research as part of their day-to-day activities. From historical research and investigations into artefacts undertaken by all museums, to the

¹²⁸ 'Arts-related income' is all income earned from professional work within an artist's field, but not from core creative work. Teaching is the most common component of this.

¹²⁹ Throsby, D. (2006), 'Economic Aspects of Arts Education', Invited paper given at World Conference on Arts Education, Building Creative Capacities for the 21st Century, Lisbon, Portugal, 7 March 2006.

¹³⁰ National Museum Directors' Conference, Museums deliver

¹³¹ National Museum Directors' Conference, Museums deliver

development of new technologies, arts and cultural organisations act as important centres of research. The knowledge contributed to the broader economy through such research is likely to be of substantial value.

6.5 The arts and culture in further education and community learning

While there were no data available on the number of adults (over 16) taking further education courses in arts and crafts, the nearest comparable discipline, ‘arts, media and publishing’ is by far the largest area of further education provision. The latest available data, for academic year 2009-10, showed that 29 per cent of all community learning courses fell into this category, representing participation by 329,800 adult learners.¹³² A further 264,300 people completed further education courses leading to qualifications in arts, media and publishing subjects in 2010-11.¹³³

Many of these individuals undertake such courses for purposes other than gaining employment: a 2012 survey of adult learners by the Department for Business, Innovation and Skills (BIS) found that 59.5 per cent took courses for reasons that were not related to employment.¹³⁴ For many participants, the acquisition of new skills, continuing personal development and cultural enrichment were more important. For a minority of participants, courses provide a pathway to develop hobbies into ways for generating income, as illustrated by research by Voluntary Arts England.¹³⁵

While it is difficult to evaluate the impact of these courses on employment, there is evidence that they improve productivity in other ways, particularly through improvement of individual wellbeing. The proposition that participation in artistic activities can improve life satisfaction, and even health, is well established. The same BIS survey found that 80 per cent of those completing further education courses indicated that they had gained self-confidence or self-esteem.¹³⁶ Half of respondents also indicated that learning and training had helped them undertake more voluntary work or community-related activity.

This is consistent with the findings of Dodds (2008) that participants in adult education courses benefited from an increased sense of social inclusion and improved self-confidence, creativity and self-esteem.¹³⁷ Completing further education courses is also a recognised method of helping people remain active and to cope with health problems and disabilities.¹³⁸

Such increases in social inclusion, self-esteem and self-efficacy could well be the mechanism behind the wider positive effects associated with adult learning participation. Schuller et al (2002) find qualitative evidence to suggest that further education induces positive mental health effects,

¹³² The Data Service, (2011), *2008/09 & 2009/10 Adult Safeguarded Learning Enrolments by Sector Subject Area Report*. These figures include a range of community based and outreach learning opportunities, mostly delivered by local authorities and general further education colleges, including classes which bring together adults of different ages and backgrounds.

¹³³ The Data Service (2011), *2010/11 Education and training success rates by sector subject area*. These courses are classroom-based further education learning which takes place at a further education college or provider, including provision for 16- to 18-year-olds.

¹³⁴ Department for Business, Innovation and Skills (2013), *The Impact of Further Education Learning*, BIS Research Paper Number 104.

¹³⁵ Gardiner, L. (undated), *Making the Leap: From Labour of Love to Earning a Living*, Voluntary Arts England.

¹³⁶ See footnote 134 above.

¹³⁷ Dodds, F. et al (2008), *Our Creative Talent: the voluntary and amateur arts in England*, DCMS

¹³⁸ See footnote 134 above.

particularly among older learners.¹³⁹ Chevalier and Feinstein (2004) found further evidence to support this, with education providing substantial returns in terms of improved mental health.¹⁴⁰

6.6 The role of the arts and culture in improving wellbeing

Wellbeing, as well as being important for its own sake, is also valued as an essential determinant of an individual's productivity. The Government Office for Science's final report from the 2008 *Foresight Mental Capital and Wellbeing* project defined mental wellbeing in terms of it being a vital condition for individuals to 'develop their potential, work productively and creatively, build strong and positive relationships with others and contribute to their community.'¹⁴¹

Regular activities in the arts and culture can have a substantial effect on subjective wellbeing, according to relatively recent analysis of *Taking Part* survey data. This found that individuals taking part in an arts and cultural activity once a week reported a positive effect on their wellbeing, equivalent to about one-third of the positive effect from being in employment, and one-quarter of that from being in good health.¹⁴²

Recent research, which used new techniques to value improvements in wellbeing, found that visiting museums, participating in and being an audience to the arts all increased happiness. Monetary sums were derived to value this happiness, by comparing its value to the expected additional happiness that results from winning a sum of money. The results of these comparisons are displayed in Table 17 below.¹⁴³ These values can be interpreted as the amount of money people would in theory forgo to undertake the activity.

Table 17: Value of happiness gained through activities relating to the arts and culture

Activity	Value per year
Visiting museums in free time	£3,228
Participation in the arts	£1,500
Audience to the arts	£2,047

Source: Fujiwara (2013)

An important mechanism through which the arts and culture support wellbeing is through improved health. There is significant evidence that engaging with the arts and culture improves health.¹⁴⁴

¹³⁹ Schuller, T., Brasnet-Grundy, A., Green, A., Hammond, C. and Preston J. (2002), *Learning, Continuity and Change in Adult Life, Wider Benefits of Learning Research Report No.3*, Centre for Research on the Wider Benefits of Learning.

¹⁴⁰ Chevalier, A. and Feinstein, L. (2006), *Sheepskin or Prozac: The Causal Effect of Education on Mental Health*, Centre for Research on the Wider Benefits of Learning Discussion Paper, Institute for Education

¹⁴¹ Foresight Mental Capital and Wellbeing project (2008), Final Project Report – Executive summary, The Government Office for Science, London

¹⁴² Department for Culture, Media and Sport (2010), *CASE: Understanding the drivers, impact and value of engagement in culture and sport*.

¹⁴³ Fujiwara, D. (2013), 'Museums and happiness: the value of participating in museums and the arts', *The Happy Museum*. By focusing on the value of wellbeing gained by participating in arts activities this methodology gives greater clarity over causality, and avoids the difficulties in valuing perceived impacts through qualitative research. The monetary amounts reported as being gained through arts and cultural activities are calculated by comparing levels of happiness across those who do and do not take part in the activities listed, and matching these with reports of how income increases happiness.

¹⁴⁴ *Ibid.*

Some of the many ways through which this occurs are identified by a systematic review by Staricoff (2004) for Arts Council England.¹⁴⁵ Box 10 below lists selected examples.

Box 10: Selected examples of the arts and culture activities' positive impacts on health outcomes

- Singing has been found to affect hormones that facilitate emotional balance (Bailey and Davidson, 2005¹⁴⁶) and to improve memory in patients with Alzheimer's disease (Hui and Stickley, 2009¹⁴⁷).
- Professionally conducted arts activities improve the overall health of older adults, as well as reducing the use of medication, doctors' visits and falls (Cohen et al, 2006¹⁴⁸)
- In cardiovascular units, the use of music led to reduced levels of reported anxiety and improvements in vital signs including blood pressure and heart rate (White, 1999¹⁴⁹).
- Access to the arts during medical procedures for screening or diagnosis can reduce levels of stress hormone and blood pressure (Schneider, 2001¹⁵⁰). Music has similar benefits in reducing anxiety and its physical symptoms before surgery.
- Patients who experienced visual arts and live music on trauma and orthopaedic wards stayed in hospital for a day less. Their need for pain relief was also reduced (Staricoff and Loppert, 2001¹⁵¹).

While we have identified some channels through which participation in arts and cultural activities can enhance productivity via well-being improvements, it was not possible in this study to comprehensively assess the scale and scope of these positive effects. We identify, in the remainder of this section, some areas in which further investigation would be useful in determining a more precise estimate of the contribution of arts and culture in these domains.

Volunteer participation in the arts and culture is an area where associated well-being effects are likely to be significant. Almost one-fifth of all participation in the arts and culture in England are through voluntary and amateur groups. Dodds (2008) found that there were 49,140 of these groups, comprising 5.9 million members, with 3.5 million more individuals volunteering as helpers or extras. Thus a total of 9.4 million volunteers and amateurs participate in these arts and culture activities.¹⁵² Survey data from this same DCMS "Our Creative Talent" project suggests that most participation in these activities is driven by the desire to develop skills in a particular art form, not for professional purposes, but rather for personal achievement.¹⁵³

¹⁴⁵ Staricoff, R. (2004), *Arts in health: a review of the medical literature*, Arts Council England Research Report 36.

¹⁴⁶ Bailey, B. and Davidson, J. (2005), 'Effects of group singing and performance for marginalised and middle-class singers', *Psychology of Music*, 33(3): 269-303.

¹⁴⁷ Hui, A. and Stickley, T. (2009), *Guidelines to Art, Making art available to all, An Evaluation Report*, Society for All Artists/University of Nottingham.

¹⁴⁸ Cohen, G. et al (2006), 'The Impact of Professionally Conducted Cultural Programs on the Physical Health, Mental Health and Social Functioning of Older Adults', *The Gerontologist* 46(6): 726-734.

¹⁴⁹ White, J. (1999), 'Effects of relaxing music on cardiac autonomic balance and anxiety after acute myocardial infarction', *American Journal of Critical Care* 8(4): 220-230.

¹⁵⁰ Schneider, N. et al (2001), 'Stress reduction through music in patients undergoing cerebral angiography', *Neuroradiology* 43(6): 472-476.

¹⁵¹ Staricoff, R., and Loppert, S. (2003), 'Integrating the arts into healthcare: can we affect clinical outcomes?', in Kirilin, D. and Richardson, R. (eds.), *The Healing Environment: Without and Within*, Royal College of Physicians.

¹⁵² Dodds, F. et al (2008), "Our Creative Talent: the voluntary and amateur arts in England", Department for Culture, Media and Sport

¹⁵³ *Ibid.*

Participation in the arts and culture is widespread amongst older age groups: 30 per cent of members of voluntary and amateur arts groups are retired, with Davies (2009) and D'Souza et al's (2008) studies finding very high proportions of older-aged volunteers in heritage activities (where over half were over the age of 60), and the museums and libraries sector (featuring 72 per cent of volunteers aged over 65).¹⁵⁴ Lum and Lightfoot (2005) underlines how such activities support well-being among the elderly, finding that volunteering increases life satisfaction and perceived health to a greater extent for those aged 60 or over than for younger people.¹⁵⁵

Arts Council England has recognised the importance of engaging older age groups, and has supported programmes aiming to do so through its Arts and Older People Fund, which provides grants to develop high-quality on-going programmes for older adults. Monitoring how these programmes impact on health outcomes would be instructive in estimating their social and economic benefits through, for example, a reduced burden on taxpayer-funded health and social care services.

Volunteering, in addition to the well-being effects discussed in this section, can help in the development of skills which support employability. Many organisations in the arts and culture industry offer volunteer schemes aimed directly at helping people move towards employment. Some of the examples we encountered through our survey and in-depth interviews are summarised in Box 11.

Box 11: Selected volunteering programmes aimed at improving employability in the arts and culture

- Imperial War Museum North and The Manchester Museum have, for over five years, run a partnership volunteer programme called "In Touch", which is specifically targeted at the unemployed and disabled. Volunteers are enrolled on a 10-week Cultural Heritage course, following which they undertake a variety of roles in the museums. Over 180 volunteers have taken part, all reporting improved transferable skills, self-confidence and health. Furthermore, 18 per cent have since moved into employment and a further 49 per cent into further education.
- Tyne and Wear Archives and Museums have a 'culture track', where they work with referral agencies for individuals who are hard to place. They offer key skill support, help in pursuing qualifications and work with the volunteers to find opportunities which interest them within the museums.
- Southbank Centre offers training to young people who volunteer during their festivals. Participants spend between six and eight weeks on a training programme before working at a four-day festival.

For those using volunteering as a tool to actively develop their skills and experience, it can improve employment prospects. Hirst (2001) finds that people who undertook volunteering as part of their job search had more success finding work, with a stronger effect observed among the long-term unemployed.¹⁵⁶ However, measuring the exact impact of volunteer programmes in the arts and culture industry is not possible at present due to the lack of the requisite data on the types, structures and scales of volunteer programmes, the demographics and motivations of volunteers, and subsequent employment outcomes. The collection of such data by Arts Council England and

¹⁵⁴ See Davies, K. (2009), "A report on the performance of the English Heritage education volunteering programme", English Heritage and D'Souza et al, (2011), "Understanding the drivers of volunteering in culture and sport: analysis of the Taking Part survey", CASE.

¹⁵⁵ Lum, T. and Lightfoot, E. (2005), "The Effects of Volunteering on the Physical and Mental Health of Older People". Research on aging found that those over 70 who had volunteered for at least 100 hours in 1993 were 38 per cent less likely to die before 2000, controlling for demographics, marital status, socio-economic status and baseline health.

¹⁵⁶ *Ibid.*

other bodies like NMDC would improve the feasibility of measuring the long-term value of these schemes in terms of improving the productivity of the nation.

7 Investment in the arts and culture as a catalyst for economic regeneration

There are many case studies of the regeneration effects of the arts and culture, their institutions and events. These usually rely on primary survey data, with contextual nuances around regeneration outcomes making it difficult to draw broader conclusions about the magnitude and durability of these regeneration effects.

Furthermore, many studies do not comprehensively evaluate the underlying state of an area before the arts and cultural investment or only report on the impact of the project for a short period after its completion. This poses problems for assessing the longer-term impacts that the arts and culture can have on a given geographic location. More careful collection of these types of data on individual projects in the future would make it easier to assess their contribution to regeneration.

Nevertheless, we can identify some ways in which investment in the arts and culture can drive improvements in the quality of their local environment and the standard of life enjoyed by local communities. These investments could be particularly important, at a time of growing economic divergence between the UK's regions, in helping to restore confidence and drive economic activity to areas which have seen local industries badly-hit in the protracted downturn since the financial crisis.

7.1 The mechanisms by which investment in the arts and culture drives regeneration

Economic regeneration through the development of arts and cultural amenities has been a strategy undertaken in many local areas in the UK, from St Ives to Swansea and Glasgow to Gateshead. Table 18 lists some of the avenues by which investment in the arts and culture can improve outcomes in a local area.

Table 18: The regeneration effects of investment in the arts and culture

ECONOMIC OUTCOMES	SOCIAL OUTCOMES	ENVIRONMENTAL OUTCOMES
Employment	Increased social capital	Re-use of redundant buildings
Inward Investment	Change in perception of area	Increased sense of public safety
Attracting a skilled workforce	Volunteering	Reduced vandalism
Property values	Residents' confidence	Pride in place
Visitor and resident spending	Community cohesion	
	Educational achievement	
	Improved health and wellbeing	
	Crime reduction	

Source: Cebr research

The exact mechanisms through which investment in the arts and culture drives regeneration vary. The past and current circumstances of each location are unique and the effects of interventions are dependent upon these circumstances.

We also noted that it is rare for regeneration efforts involving the arts and culture to take place in isolation. Rather, cultural efforts usually form part of a broader strategy including, for example, the development of green spaces or revitalising commercial districts. Pinpointing the precise contribution of investments in the arts and culture in this context is of course problematic because there is so much else changing at the same time. Below, we turn our attention to more measurable indicators of the role of the arts and culture in improving local economies and environments.

7.2 The benefits to local business of arts and cultural attractions

Local investment in the arts and culture can be expected to vitalise local commercial creative endeavour and businesses through the mechanisms outlined in section 5 above. The emergence of new and successful local creative industries can, in turn, help to rebalance regional economies that have seen traditional industries decline. The economic activities of such creative activities as a result of the original local investment in the arts and culture also provide a boost to the local economy through the kinds of direct and multiplier impacts outlined in section 3 above.

During 2008, Liverpool's year as European Capital of Culture, the number of creative businesses there increased by eight per cent, suggesting that the regeneration programme, including its significant programme in the arts and culture, generated further commercial creative activity. Similar increases in business creation have been observed in association with the Turner Contemporary Gallery in Margate¹⁵⁷ and the Newcastle-Gateshead cultural development project,¹⁵⁸ with evidence of several more examples in existence.

Other sectors of the local economy also benefit from direct spillovers. For example, those offering visitor services like restaurants, hotels, bars, cafés and retailers all benefit from the spending of visitors to the local arts and cultural attractions. Furthermore, new projects in the arts and culture could attract significant media attention, thus increasing the area's profile and drawing even more visitors to the locality. The money these visitors spend as a consequence of their trip to the arts and culture attraction spreads through the broader economy, sustaining local jobs and businesses.

7.3 The impact of the arts and culture on house prices

Economic analysis of the desirability of a locality often draws upon house price data, the proposition being that the value of housing provides a proxy reflecting 'willingness-to-pay' to live in that locality. Local amenities are of course a consideration for those contemplating moving to a particular locality.

There is anecdotal evidence to suggest that house prices can be expected to be higher in localities with higher concentrations of the arts and culture and to rise where investment in the arts and culture has just taken place. For example, in Liverpool, there was a significant rise in the general

¹⁵⁷ Five Lines Consulting (2012), *Turner Contemporary – Year 1 Economic Impact Assessment Report*.

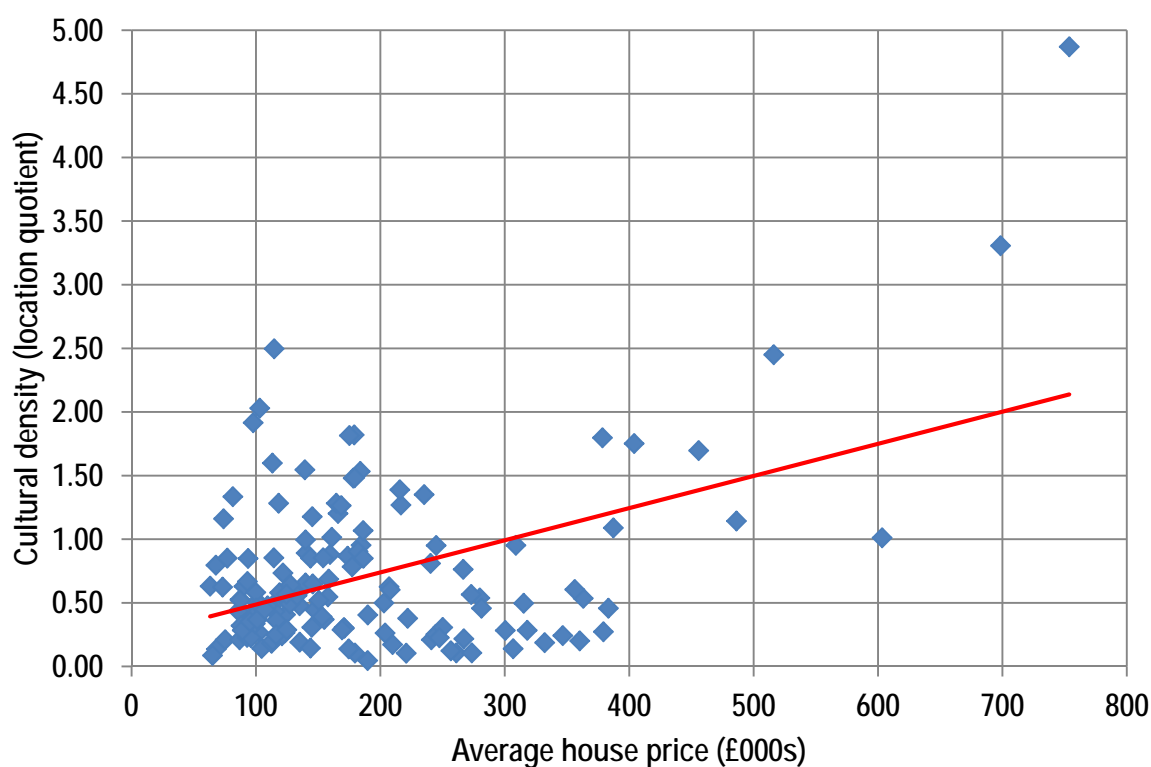
¹⁵⁸ ERS Research and Consultancy (2012), *Newcastle-Gateshead Cultural Venues, Economic Impact Assessment 2011-12 Final Report*.

level of house prices between 2003 and 2005, which some commentators attributed to the announcement of the city's impending status as European Capital of Culture 2008.¹⁵⁹

To examine this issue in a bit more detail, we set about developing a measure of arts and cultural density to assess whether statistical relationships exist that might suggest a role for arts and cultural density in determining house prices. To develop this measure of cultural density, we used post code data for UK cultural institutions provided by Culture24. These data were previously used to measure cultural density by Bakhshi et al (2013).

The measure of density of the arts and culture amounted to the concentration of cultural assets in a given locality, as measured by the number of sites where the arts and culture organisations exist per 1,000 inhabitants. Figure 40 illustrates our findings on the correlation between this measure of 'density' of the arts and culture and average house prices, which suggests that there is at least a positive correlation between them.

Figure 40: Cebr's findings on the correlation between cultural density and house prices



Source: Culture24, Cebr analysis

But the cultural density of a locality is, of course, only one of a wide range of factors that can be expected to influence house prices.¹⁶⁰ For example, in the case of Liverpool, rising prices observed in

¹⁵⁹ See Garcia, B., Melville, R. and Cox, T. (2008), 'Creating an Impact: Liverpool's experience as European Capital of Culture', *Impacts* 08. See also http://www.bbc.co.uk/liverpool/capital_culture/2004/03/property/index.shtml, and http://www.lloydsbankinggroup.com/media/pdfs/halifax/2008/September/06_09_08_Liverpool_city_of_culture.pdf.

the period 2003-05 can be partially attributed to the relatively subdued price levels seen over preceding years and the fact that few new homes had been built. Amid such demand-side and supply-side issues, isolating the impact of cultural density on house prices is difficult. But statistical techniques do exist that can help to isolate the effects of changes in one factor, like cultural density, on a variable, like house prices, by holding the effects of other things we think may affect this variable constant.

The application of this to house prices involves controlling for differences in the physical features of localities (such as whether they have more parks, better transport links) and for differences in community characteristics, such as the average age of the population. This analysis will at least provide some idea of the isolated effect of cultural density. This is doubly important because it is likely that many of the factors which influence house prices could also be correlated with density of the arts and culture. For instance, good transport links are an important factor in predicting house prices, but it can also be expected that the arts and culture industry is also more likely to want to be located in cities and towns with better transport links.

Because we would expect both of these factors to boost house prices, making sure that only the influence of cultural density is picked up makes it necessary to control for transport links. Stern and Seifert (2010) used these techniques to assess the effects of cultural density on house prices in the US, finding that localities with higher density had higher house prices.¹⁶¹

Through an application of these techniques, we investigated whether cultural density could be said to affect house prices in the UK. Controlling for the factors outlined in Appendix V, we find that cultural density is an important determinant of house prices. While, as expected, house prices are significantly higher in London, cultural density accounts for a significant proportion of this premium. The results of the analysis suggests that being located in an area with twice the average level of cultural density could raise house prices by as much as £26,817, holding all other characteristics constant.¹⁶² The full results of our linear regression analysis can be seen in Appendix V.

7.4 The impact of investment in the arts and culture that is related to place

The most successful cities tend to be distinctive, with niche economic sectors and unique characteristics.¹⁶³ Distinguishing features help to attract people and businesses, attracting attention and adding value through the benefits of association. The ambience of exclusivity and distinctiveness created by a city with a strong offer in the arts and culture could even influence the way consumers view products of that city, leading them to attach additional value to them. Media ‘buzz’ can play a role in developing these associations. For example, analysis of Liverpool’s experience as the

¹⁶⁰ The supply of available housing, an area’s accessibility in terms of its transport links, the physical features of the area such as green spaces or a coastal location, and characteristics of the local community (such as school quality, crime rates and demographics) have all been shown to have an effect on house prices.

¹⁶¹ Stern and Seifert (2010), ‘Cultural Clusters: The Implications of Cultural Assets Agglomeration for Neighbourhood Revitalisation’, *Journal of Planning Education and Research* 29

¹⁶² We note, however, that property price rises are not always beneficial. While investment in the arts and culture might kick-start a period of regeneration, the chances of survival of the small businesses that make up the sector are generally sensitive to changes in rents. Regeneration that includes the arts and culture and that leads to rising house prices could result in the artists whose activities increased the attractiveness of the locality being priced out of the legal market. Gentrification could thus make regeneration led by the arts and culture less sustainable, if it means the area loses the distinctive character that made it desirable in the first place. Rising house prices and rents may also push out existing residents, forcing children to switch schools and separating families from their neighbours and friends.

¹⁶³ Lee, N. (2007), *Ideopolis: Knowledge City-Regions, Distinctiveness and Cities – Beyond ‘Find and Replace’ Economic Development?*, The Work Foundation

European Capital of Culture in 2008 suggests that the shift in focus of national news coverage of the city away from its economic and social problems improved the way the city was perceived elsewhere in the country.¹⁶⁴

Evans (2005) and Ilmonen (2009) assert that regeneration led by the arts and culture is most likely to succeed when it is intimately linked to conceptions of place, with galleries and museums playing a role in helping residents understand the changing economic geography of their region. They find that the more local the cultural reference, the more likely it is that cultural institutions will be sustainable and drive real change at the local level.¹⁶⁵

Most of the arts and culture organisations that we interviewed make efforts to connect their offer to their geographical surroundings and considered this as important factor in success and in making a local impact. Box 12 below describes some of the ways in which arts and cultural organisations ensure their offering is related to place.

Box 12: Evidence of the arts and culture organisations making their offer relevant to their locality

- Imperial War Museums tailors its offering and strategy to each of its host regions. IWM North, for example, has always found that regionally-focused exhibitions draw more visitors, and so offers these while also maintaining the strong Imperial War Museums brand and the expectation of quality assurance that this brings.¹⁶⁶
- Tyne and Wear Archives and Museums is a partner in creating a Festival of the North East to celebrate the return of the Lindisfarne Gospels – originally created in the North East – to the region in summer 2013.¹⁶⁷
- Whitechapel Gallery explicitly seeks to learn from the community and to provide the kind of programme residents want to see through their Local Knowledge Research Forum.¹⁶⁸
- For Ironbridge Gorge Museums Trust, an important part of their role is ‘engendering a sense of pride and place for local residents in being the birthplace of the industrial revolution’.¹⁶⁹

Many of these organisations also emphasised the importance of offering world-class culture to their local community.¹⁷⁰ They told us that it was important in developing pride of place, and the feeling that their ‘place’ has something to offer, thus enhancing local pride and raising self-esteem.

The regeneration benefits of participatory arts are said to be superior and sustained relative to those of passive cultural consumption, which can reinforce the perceived barriers between demographic groups. For instance, an art gallery in a deprived area will have a limited impact if it is not seen to belong to the community. Thus, the arts and cultural organisation, amenity or attraction must be seen as a part of its community if it is to contribute to improvements in the quality of life of local residents.

¹⁶⁴ Garcia et al (2008), *Creating an impact: Liverpool’s experience as European Capital of Culture*.

¹⁶⁵ Ilmonen, K. (2009), *The Role of Culture in Regional Development Work – changes and tensions*, University of Jyväskylä.

¹⁶⁶ Cebr interview with Imperial War Museums, February 2013

¹⁶⁷ Cebr interview with Tyne and Wear Museums, March 2013

¹⁶⁸ Cebr interview with Whitechapel Gallery, April 2013.

¹⁶⁹ Ironbridge Gorge Museums Trust survey return

¹⁷⁰ Southbank Centre survey return and interview with Tyne and Wear Museums, March 2013; interview with Imperial War Museums, February 2013; interview with Whitechapel Gallery, April 2013; interview with Artichoke Trust, March 2013.

Evidence collected during our primary research programme found that even the largest organisations in the arts and culture industry play an important role in their community, through outreach work, partnerships with local schools and support for local businesses. The arts and culture may thus, as evidenced in aforementioned examples, drive regeneration by providing a community with an understanding of its history, strengthening inter-generational understanding and developing a sense of pride in place.

This, in turn, can be expected to lead to reduced crime and raised self-esteem of residents, which may in turn make the location more attractive for business investment. This would lead to more employment opportunities.

The arts and culture industry also plays an active role in its communities, offering local people the chance to participate in some way. Box 13 below gives some examples of community work undertaken by organisations from the arts and culture industry interviewed as part of this study. Such work can also be significant in the regeneration of a locality.

Box 13: The arts and culture industry's work in local communities

Tyne and Wear Archives and Museums has been involved in community outreach work since 1991. Its teams work with groups supporting the unemployed, homeless, and those battling addiction, encouraging creative expression. One project, *Culture Shock*, involved 650 people from the North East, giving them the opportunity to tell their own stories and was recognised as a great success by the local authorities, local services and charity workers.¹⁷¹

Sheffield Theatres host the Sheffield People's Theatre, an intergenerational community group.¹⁷²

Each Tate gallery undertakes outreach work tailored to the needs of the locality, from a community garden behind Tate Modern in Southwark to 'Look Groups' which provide opportunities to discuss art in communities across the breadth of Cornwall, and the *Our Liverpool Landscape: From Turner to Today*, in which an expanded learning programme engaged residents local to Springfield, Everton and Princes parks.¹⁷³

Southbank Centre gives permanent office and workshop space to SE1 United, a youth forum that runs after-school and weekend clubs and provide artistic liaison and rehearsal, performance and workshop spaces to In Harmony Lambeth, a charity aiming to transform the lives of children through community-based orchestral music-making.¹⁷⁴

Manchester International Festival's learning programme, MIF Creative, is at the heart of the Festival, aiming to engage local communities and develop local talent. This includes working with local religious groups, school children, universities and providing a training programme for young creative entrepreneurs.¹⁷⁵

Investment in the arts and culture could attract skilled workers to a locality, creating a 'brain gain' and making the region more attractive to businesses.¹⁷⁶ Availability of skilled labour tends to be the

¹⁷¹ Cebr interview with Tyne and Wear Museums, March 2013

¹⁷² Cebr interview with Tate, March 2013

¹⁷³ Interview with Tate, March 2013; <http://www.tate.org.uk/about/projects/tate-modern-community-garden>, accessed 12 April 2013; <http://www.tate.org.uk/about/projects/look-groups>, accessed 12 April 2013; <http://www.tate.org.uk/whats-on/tate-liverpool/special-event/our-liverpool-landscape-community-arts-showcase>, accessed 12 April 2013

¹⁷⁴ Southbank Centre survey return, March 2013.

¹⁷⁵ Manchester International Festival survey return, March 2013.

¹⁷⁶ Cushman, Wakefield, Healey and Barker (2004), 'European Cities Monitor 2004', cited in Nathan, M. (2007), *The Wrong Stuff? Creative Class Theory and Economic Performance in UK cities*, London School of Economics and Centre for Cities.

most significant factor in a business's choice of where to locate. If skilled workers are attracted by the arts and culture amenities in a locality, areas with higher cultural density could be expected to be more attractive to firms. Attracting businesses to previously run down localities creates employment and boosts income, accelerating the locality's transformation.

Anecdotal evidence suggests that skilled workers are attracted to cities with a strong arts and cultural presence. Following the cultural development of Newcastle and Gateshead, businesses reported that they were increasingly employing people from outside the North East region who had been attracted to the area by the arts and culture amenities.¹⁷⁷ However, it is likely that many other factors were significant in this movement apart from the arts and culture offer, as Minton (2003) discusses.

While, for some people, the arts and culture attractions may be an important factor in the decision to move to or locate in a particular area, for the majority of people, it is likely to be a much less important consideration. Survey data from the UK suggests that, while the arts and cultural offering is seen as an important component of a place to live, unless other fundamental variables are in place such as the availability of employment, public service provision, low crime and clean streets, no amount of investment in the arts and culture could hope to attract or retain workers.¹⁷⁸

Cultural density, therefore, is one factor that can influence location decisions but the current evidence does not support the proposition that it is a particularly important factor in driving arts-and-culture-led regeneration.

¹⁷⁷ Minton, A. (2003), *Northern Soul: Culture, creativity and quality of place in Newcastle and Gateshead*, RICS/Demos. The results of a survey of 70 creative firms in the summer of 2003 suggested that 54 per cent of these firms said they were increasingly employing people from outside the North East, with 25 per cent reporting that a majority of their employees were recruited from elsewhere.

¹⁷⁸ Jones et al, (2006), *Ideopolis: Knowledge City-Regions*, The Work Foundation

8 Suggested areas for further research

This section uses what we have learned about how well understood are the economic impacts of the arts and culture on national and constituent economies to produce ideas for possible areas of further research.

8.1 The ‘business economy’ and macroeconomic impact analysis of museums

The most disappointing aspect of the study was the need to exclude museums from the ‘business economy’ and macroeconomic impact assessments of the arts and culture industry as defined for the study. This was because much of the value being generated by museums is from activities that are not being classified under the 91.02 museum activities SIC code, which rendered the national statistics that are available unusable for our purposes. Developing robust estimates of the ‘business economy’ and macroeconomic impacts of museums in isolation or for inclusion in the definition of the arts and culture industry developed in this study is not a trivial undertaking.

We would suggest one or both of the following:

- A short-term solution involving research of the classifications assigned to museum companies registered with Companies House, acquisition of those companies’ financial accounts and the production of estimates of ‘business economy’ indicators like turnover and persons employed. This would provide the starting point for the macroeconomic impact assessment of museum activities, but would need to be accompanied by requests for data requested in the survey that formed part of this study (see below).
- A more long-term solution involving an investigation of the feasibility of all museums classifying the entirety of their activities in the SIC code for museum activities, in recognition of the fact that most of museums’ ancillary activities probably would not exist without the museums themselves. However, this is likely to require consultation with ONS and possibly with Companies House and other organisations.

8.2 Producing more robust estimates of the impacts of the arts and culture industry

Section 3 of the report noted that, due to the lack of sufficiently granular data, we were restricted to providing estimates of macroeconomic impacts for broader subsets of the economic activities that constitute our definition of the arts and culture industry. It was not possible, in other words, to produce separate indicators for the six art forms – theatre, dance, literature, visual arts, music and combined arts. The primary research element of this study did provide data that, in aggregate form, produced a useful cross-check against our estimates based on the methods outlined in Appendix III.

However, were the Arts Council to request from all National Portfolio Organisations (NPOs) the data requested in the survey that formed part of this study on a more systematic basis,¹⁷⁹ it would eventually have at its disposal a robust sample with which separate macroeconomic impacts could be estimated for things like the aforementioned six art forms. The same is true for NMDC and its member organisations. The data requested as part of our survey is shown in Appendix IV.

¹⁷⁹ Questions 12, 13 and 16 in particular.

8.3 Potential further research on the spillover impacts of the arts and culture

Nesta's *A Creative Manifesto* has highlighted the rapid expansion of the UK's creative digital industries, including video games and software development. At present, however, little is known centrally about the use of digital technology in arts and cultural organisations. Further research is needed to understand how arts and cultural organisations are supporting the growth of these industries. Drawing on the UK and England's existing provision of world-class art and culture should continue to help secure their place as world leaders in digital creative industries in the future.

Primary research for this report found examples of some innovative partnerships between arts and cultural organisations and digital businesses – for example, Tyne and Wear Museums and Whitechapel Gallery's support of 'Hackathon' events where artists and computer programmers collaborated to repurpose existing data in a way that shocks, surprises or inspires.¹⁸⁰ Further research could explore how widespread these practices are, uncover other ways in which arts and cultural organisations support digital creative industries and assess their economic impact.

Recent research has demonstrated the importance of publicly-funded arts and cultural organisations as centres for talent development in the theatrical world. Further research could attempt to assess the extent to which this holds true across other art forms. A wider survey of those working in arts and cultural organisations in both the public and private sector could give greater systematic insight into the movement of talent around the industry, and potentially provide greater support for the argument that the UK's publicly-funded arts and cultural organisations are vital to maintaining the flow of talent to commercial creative businesses.

This report has identified some of the ways in which arts and cultural organisations provide support to creative commercial industries, and found some anecdotal evidence for these. Future research could attempt to map these interactions and their outcomes systematically. A survey of creative businesses to identify the extent of such interactions and their perceived benefits could help establish the value of these activities across the sector.

The new Culture24 dataset of arts and cultural organisations presents a great opportunity for future research into the importance of creative clusters. Clusters seem to grow organically and there is currently a lack of a clear understanding of the causal processes behind this. The Culture24 dataset, by recording where cultural activities are taking place across the UK, offers the opportunity to map the UK's cultural activity over time. This may allow new clusters to be identified at an earlier stage and research to be undertaken to establish the processes at work. This could provide vital insight into how cultural development can feed regeneration.

8.4 The intrinsic value of the arts and culture

While the methodology of this report values the economic contribution of the arts and culture, in terms of GDP and employment, we recognise that the arts and culture have their own intrinsic value. Methodologies that could place an objective, comparable value upon these benefits are not yet well established. Techniques such as contingent valuation and subjective wellbeing are becoming more accepted, however, as seen in the recent Happy Museums report.¹⁸¹ These methods, alongside

¹⁸⁰ Interview with Whitechapel Gallery, April 2013; Interview with Tyne and Wear Museums, March 2013.

¹⁸¹ Fujiwara, D. (2013), "Museums and happiness: the value of participating in museums and the arts", The Happy Museum.

others which may be pioneered by the Cultural Value Project,¹⁸² could provide an insight into the enormous, non-economic value that the arts and culture provide.

8.5 Understanding the impact of further public funding cuts on the arts and culture

Some of the organisations interviewed for this project described how funding cuts were putting pressure on their ability to support innovative work. The Opera Group asserted that showing innovative content means sacrificing revenues from ticket sales. They want to be experimental and take risks, but the extent to which they can do this is limited by financial circumstances.¹⁸³ Graeae Theatre Company also reported finding it hard to fund ambitious, innovative outdoor work which does not yield ticket revenues.¹⁸⁴

Larger organisations are not immune, either. Tate reported that, with funding constraints tightening and despite the ability to cross-subsidise works by lesser known artists from earnings from sponsored events, it is still more difficult to show work by lesser known artists, which brings in much lower revenue.¹⁸⁵

As these organisations increasingly face financial constraints, they are also becoming more risk averse. Without funding to encourage them to take financial risks, the work they support may never be shown. Talent and artistic output are vital to maintaining the UK's position as a world-leader in arts and cultural industries. Without developing these, and supporting risky ventures, the UK may quickly lose its place in a highly competitive market place.

A separate study examining the impact of the financial crisis and of public expenditure cuts on the arts and culture could at least inform the debate about where future further cuts are best made or avoided. Examples of organisations restructuring to deal with funding cuts include:

- Imperial War Museums have proactively restructured the organisation to deal with funding cuts. Staff numbers have fallen, and a business change programme has been implemented, placing increasing emphasis on the commercial side of the museums.¹⁸⁶
- Sheffield Theatres Trust had their public funding cut substantially, and have responded to this by changing their business structure. Creating output is crucial to maintaining their revenue through ticket income, and so they have extended their season. A price differentiation strategy has been implemented to allow ticket prices to be increased, while maintaining audience numbers.¹⁸⁷

¹⁸² The Cultural Value Project, led by Professor Geoffrey Crossick, was initiated by the Arts and Humanities Research Council in July 2012.

¹⁸³ Cebr interview with The Opera Group, March 2013.

¹⁸⁴ Cebr interview with Graeae Theatre Company, March 2013.

¹⁸⁵ Cebr interview with Tate, March 2013.

¹⁸⁶ Cebr interview with Imperial War Museums, February 2013.

¹⁸⁷ Cebr interview with Sheffield Theatres Trust, March 2013.

Appendix I: SIC-based definition of the arts and culture industry

Sector	Division	4-Digit SIC	5-Digit SIC, with description
J Information and Communication	58 Publishing activities	58.11 Book publishing	58110 Architectural drawing publishing 58110 Atlas publishing 58110 Audio book publishing 58110 Book publishing 58110 Brochure publishing 58110 Chart publishing 58110 Dictionary publishing 58110 Electronic publishing of books 58110 Encyclopaedia publishing 58110 Engineering drawing publishing 58110 Geographical publishing 58110 Leaflet publishing 58110 Map and plan publishing 58110 On-line book publishing 58110 Pamphlet publishing 58110 Publishing on CD- ROM 58110 Religious Tract publishing 58110 The Stationery Office
	59 Motion picture, video and television, sound recording and music publishing activities	59.2 Sound recording and music publishing	59200 Compact disc sound recording publishing 59200 Copyright acquisition and registration for musical compositions 59200 Gramophone record publishing 59200 Matrice for record production 59200 Music (printed) publishing 59200 Music downloads (on-line publishing with provision of downloaded content) 59200 Music tape publishing 59200 Printing of sound tracks 59200 Publishing of music and sheet books 59200 Recording studio (radio) 59200 Sound recording publishing 59200 Sound recording studios 59200 Taped radio programming production
R Arts, Entertainment and Recreation	90 Creative, arts and entertainment activities	90.01 Performing arts	90010 Actors 90010 Aerobatic display 90010 Animal training for circuses, etc. 90010 Ballet company 90010 Band (musical) 90010 Circus 90010 Concerts production 90010 Conjuror 90010 Dance band 90010 Dance productions 90010 Impresario 90010 Lecturers 90010 Musicians 90010 Opera production 90010 Orchestras 90010 Organist (own account) 90010 Pop group 90010 Public speaker 90010 Repertory company 90010 Revue company 90010 Singer (own account) 90010 Speakers (after dinner etc.) 90010 Stage productions 90010 Street musician or singer 90010 Theatrical presentations (live production)) 90010 Theatrical touring company 90010 Travelling show 90010 Variety artiste (own account) 90010 Ventriloquist

Sector	Division	4-Digit SIC	5-Digit SIC, with description
R Arts, Entertainment and Recreation	90 Creative, arts and entertainment activities	90.02 Support activities to performing arts	90020 Direction, production and support activities to circus performances 90020 Directors (theatre) 90020 Performing arts support activities 90020 Scene shifters and lighting engineers 90020 Stage set designers and builders 90020 Support activities to performing arts e.g. stage set-up, costume and lighting design etc.
		90.03 Artistic creation	90030 Art expert 90030 Artist 90030 Author 90030 Cartoonists 90030 Copper plate engraver (artistic) 90030 Designing (artistic) 90030 Engravers 90030 Etchers 90030 Fine art expert 90030 Freelance journalist 90030 Heraldic painting 90030 Illuminating (illustrating) 90030 Journalists 90030 Librettist 90030 Lithographic artist (own account) 90030 Lyric author 90030 Music composer 90030 Music copyist and transcriber (own account) 90030 Painters (artistic) 90030 Picture restoring 90030 Playwright 90030 Poet 90030 Repair and restoration of works of art 90030 Scenario writer 90030 Scenic artist 90030 Sculptors 90030 Song writer 90030 Technical and training manual authors 90030 Wood engraver (artistic)
		90.04 Operation of arts facilities	90040 Arts facilities operation 90040 Concert halls operation 90040 Local authority concert halls and theatres 90040 Music hall 90040 Opera house 90040 Theatre halls operation

Source: ONS (2010)¹⁸⁸

¹⁸⁸ ONS (2010) UK Standard Industrial Classification 2007 (UK SIC 2007) – Index numerical with addendum. Available at: <http://www.ons.gov.uk/ons/guide-method/classifications/current-standard-classifications/standard-industrial-classification/sic-2007-index-alphabetical-with-addendum.xls>

Appendix II: Contributors to the primary research

Organisations in the arts and culture that provided responses to Cebr's survey:

- Amgueddfa Cymru – National Museum Wales
- a-n The Artists Information Company
- Artichoke Trust
- Bristol City Council Museums
- British Library
- Carcanet Press Limited
- Cheshire Rural Touring Arts
- Circus Space
- Comma Press
- English Touring Theatre
- Graeae Theatre Company
- Hofesh Shechter Company
- Imperial War Museums
- London Symphony Orchestra
- Manchester International Festival
- National Museums Scotland
- National Theatre
- Natural History Museum
- Opera North
- People United
- Propeller Theatre Company
- Sheffield Theatres Trust
- Southbank Centre
- Tate
- The Hepworth Wakefield
- The Ironbridge Gorge Museum Trust
- Tyne and Wear Museums
- Vane
- Watershed
- Whitechapel Gallery
- Writing West Midlands

Organisations that participated in an in-depth interview with Cebr include:

- Artichoke Trust
- Graeae Theatre Company
- Cheshire Rural Arts Network
- Sheffield Theatres Trust
- Tyne and Wear Museums
- English Touring Theatre

- The Opera Group
- Amgueddfa Cymru – National Museum Wales
- The Hepworth Wakefield
- Imperial War Museums
- Vane
- Tate
- Whitechapel Gallery

Appendix III: Technical issues related to the approach and methodology

Section 2 presents the direct ‘business economy’ impacts of the arts and culture industry based on survey data provided almost entirely by enterprises. These ‘raw’ estimates of the economic activity, through employment, turnover and value added, generated by the arts and culture industry is subject to a number of caveats. This appendix briefly explores these caveats in the context of the ‘business economy’ analysis but also the macroeconomic impacts analysis in Section 3, which draws primarily on ONS national accounting data.

The use of a different framework inevitably means the derivation of alternative estimates of some of the same (or closely related) indicators of direct economic impact featured in section 2 of the report. However, these are arguably more robust for reasons elaborated below and as long as the assumptions made in using the national accounting framework are believable.

What UK national accounting data definitely does provide is a robust framework for the analysis of the indirect and induced multiplier impacts of the arts and culture industry, not only at the UK level but, using Cebr’s models, individually for England as a whole, the other UK nations and each of the English Government Office regions. These are the subjects of Section 3 of the report. The base data are provided through the Office for National Statistics supply and use datasets (2010 being the latest available) as well as the latest available input-output tables (for 2005).

We use this important part of the national accounting framework in conjunction with the Leontief matrix multiplier approach as the basis for our estimates of the indirect and induced impacts of the arts and culture on the UK economy.¹⁸⁹ We examine the impacts on ‘industrial’ output – which is akin to the concept of turnover as explained in the box below – gross value added (GVA), both at basic prices (see box below), on employment and on incomes from employment.

The national accounting data in the supply-use tables provide detailed information for a given year on production activities, the supply and demand for goods and services, intermediate consumption, primary inputs (factors of production) and foreign trade. National accounting data are less detailed than the business survey statistics, containing data for only 114 SIC Rev. 2 divisions (industry ‘groups’ or categories of economic activities), as opposed to several hundred in the Annual Business Survey.

The supply-and-use tables are matrices by product and industry showing the production processes and transactions of industries in respect of products (goods or services). The symmetric input-output tables are product-by-product or industry-by-industry matrices showing the production process for a given product in terms of its reliance on other products or for a given industry in terms of its reliance on other industries.

The tables provide valuable insights that cannot be accessed via the business survey datasets, such as:

- the structure of the costs of production and the value added in the production process

¹⁸⁹ Supply-use tables provide the most detailed official record of how sectors of the economy interact with other sectors, with consumers and with international markets in producing the nation’s GDP and national income. Input-output analysis, due largely to the work of Wassily Leontief (See, for example, Leontief, Wassily W. *Input-Output Economics*. 2nd ed., New York: Oxford University Press, 1986.), while macroeconomic in the sense that it involves analysing the economy as a whole, owes its foundations and techniques to the microeconomic analysis of production and consumption. (See ten Raa, Thijs (2005), *The Economics of Input-Output Analysis*, Cambridge University Press.) According to ten Raa (2005), some people argue that input-output analysis is at the interface of both, defining it as the study of industries or sectors of the economy.

- the inter-industry dependencies within the economy
- the flows of goods and services produced within the national economy
- the flows of goods and services with the rest of the world

There are also, as previously noted, caveats associated with the 'raw' estimates of economic activity provided by the business survey datasets. These relate principally to the methods used to value the economic indicator under consideration and are given due consideration in Box 1 below.

The other principal reason to expect variability between the direct economic impact estimates based on business survey data and based on the national accounts is the fact that, in the business survey estimates, businesses' employment, turnover and value added contributions are based on all of their economic activities, regardless of whether they are activities relating to the arts and culture or not.

Likewise, businesses classified in industries that do not fall within our SIC-based definition of the arts and culture industry may produce goods and services that are related to the arts and culture, even though their principal activity may not be the arts and culture (which would have led to their classification in non-arts and culture industries in the first place).

The supply, use and input-output tables facilitate, therefore, the exclusion in our economic impact valuations of economic activities or production of the arts and culture industry that might not be based on the arts and culture or the inclusion of the production of non-arts and culture-based industries that is related to the arts and culture.

These tables are thus used in conjunction with the results of our analysis of the business survey datasets in the previous section to produce estimates of the economic contribution of the arts and culture that are consistent with the UK national accounting framework. Specifically, we acknowledged that each of the more detailed SIC three- and four-digit subsets of productive activities that make up the arts and culture industry forms part of one of the 114 broader two- and three-digit industries contained in the supply-use framework. To assign the arts and culture industry an explicit role within the supply-use and input-output framework, we isolated and attributed shares of supply-use two- and three-digit industries to the three- and four-digit subsets of the arts and culture productive activities.

These attributions were based on the ratio of ABS turnover in the relevant three- and four-digit industry to SBS turnover in the relevant two-digit industry of which it forms part.¹⁹⁰

This amounts to a simplifying assumption that all industries – including the arts and culture industry – are all levied (endowed) with the same proportions of taxes (subsidies) on products and are subject to the same proportions of non-deductible VAT. To the extent that the arts and culture are levied with fewer taxes and in receipt of fewer subsidies on products¹⁹¹ and are subject to lower proportions of non-deductible VAT, the supply-use-based estimates of the economic contribution of the arts and culture industry presented in section 3 could be considered underestimates.

¹⁹⁰ The ABS turnover data are, as outlined in Box 1, based on producers' prices whereas the national accounting data are valued at basic prices. The former could not, therefore, be integrated in the latter without significant adjustment first. Undertaking such adjustments for specific categories of industries or products, such as the arts and culture, was beyond the scope of this research. That is why we used proportional relationships between the detailed subsets of activities that form the arts and culture industry and their corresponding broader two- and three-digit industries for the purposes of incorporation in the supply-use and input-output framework.

¹⁹¹ This would certainly be the case in respect of, for example, on the tax side industries like tobacco and alcohol and, on the subsidy side, like agriculture, forestry and fishing.

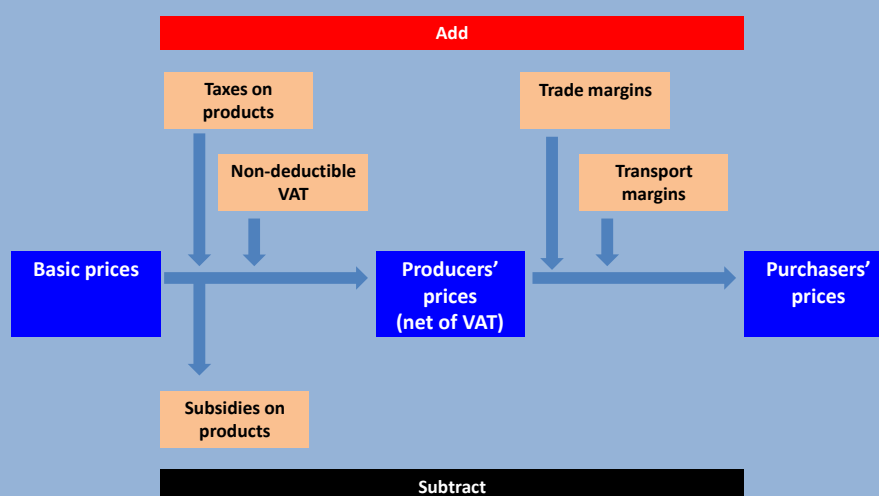
Box 14: Valuing economic indicators using business survey vs. national accounting data

The UK national accounting framework combine different types of valuation for the same variable or transaction, thereby showing different actual prices depending on the type of unit implied in the economic transaction. For example, a household that purchases a consumer good in a retail shop does not perceive its price in the same way as the producer who produced the good in question. Different types of valuation of economic indicators like production and contribution to national product (GDP) are, therefore, borne out of different definitions of the price paid in different types of transaction.

The flowchart below shows that production (or 'industrial' output) can be valued according to two principal criteria, namely whether it is a price paid by a purchaser (what the buyer has to pay) or by a producer or 'basic' price (a price concept from the producer's point of view). Producer price is an intermediate concept that is closer to the basic price but which includes taxes and subtracts subsidies on products and adds non-deductible VAT. The national accounts use basic prices and purchasers' prices and do not explicitly define "producer price".

Businesses' turnover is generally recorded at producers' prices. The ABS datasets therefore value production by the hundreds of SIC economic activities at producers' prices. But it is evident that the basic price is the best option from a theoretical point of view (that is, in terms of more accurately measuring economic impacts), reflecting more exactly than other price concepts the costs of the elements inherent in the product. In other words, the other price concepts disguise the real costs of the product and may be influenced by changes in fiscal policy or in trade and transportation. The national accounts and the supply, use and input-output tables value production at basic prices, thus providing a bridge between the 'raw' business survey estimates of the economic impact of the arts and culture and the real costs and value of production.

Flowchart – Valuing production or output



Source: Eurostat input-output methodology¹⁹²

¹⁹² The UK system of national accounts is, by law, based on the European System of Accounts (ESA95) and it is a compulsory requirement on each Member State to provide consolidated supply-use tables every five years.

Appendix IV: Survey questionnaire

The purpose of this questionnaire is to support Cebr's analysis of the economic contribution of arts and culture to the economy on behalf of Arts Council England and the National Museum Directors' Council. We encourage you to answer with as much detail as you are able to provide, in order to inform our understanding of the full economic impacts of the cultural activities you participate in. Please continue answers onto separate sheets if you wish.

We thank you in advance for taking the time to assist our research.

Section 1: Identifier questions

1. Please provide the name of your organisation.
2. Further to completing this questionnaire, would you be happy to be approached for a follow-up interview to discuss some of the topics related to this questionnaire in more detail? If yes, please provide details by which you can be contacted.
3. Please indicate whether your organisation is a regularly-funded organisation of Arts Council England.
4. As part of the annual submission to Arts Council England, your organisation may already have submitted information related to some of the questions contained within this questionnaire. If so, would you be happy for this existing data to be used in response to some of the questions below?
5. Information included within the annual accounts for your organisation would be able to answer a number of questions within this questionnaire. If you are happy for this existing data to be used, please either:
 - provide a copy of these annual accounts with this questionnaire return;
 - disclose a web URL where they may be accessed;
 - or alternatively, email the documents to Cebr.
6. Please provide the full address of your venue(s) or, alternatively, indicate its (their) location by from the below:
 - North East
 - North West
 - Yorkshire and the Humber
 - East Midlands
 - West Midlands
 - East of England
 - London
 - South East
 - South West

- Wales
- Scotland
- Northern Ireland

7. Please indicate whether your **principal activity** can be categorised as one of the 6 art forms listed below or as museums or libraries.

- Theatre
- Dance
- Literature
- Visual Arts
- Music
- Combined arts
- Museums
- Libraries

Section 2: Questions about size and economic activities

We would ideally like to receive data relating to three financial years; 2009/10, 2010/11 and 2011/12. However, if this is not convenient, please provide the latest data available for a full year's operations, and up to three years if possible.

Where more than just one year's data is required, this is indicated in the question.

We would welcome any context you are willing to provide, especially if things have changed dramatically since or leading up to the year(s) for which you are able to provide data.

8. Please provide the **turnover** (in thousands of pound sterling) of your organisation during financial years 2011/12, 2010/11 and 2009/10.
9. Please provide **total expenditure** by your organisation on **compensating employees** during financial years 2011/12, 2010/11, and 2009/10.

This should include, ideally, total remuneration, in cash or in kind, payable by enterprises to employees for work done. Therefore, covering all wages and salaries and all supplements to these, such as contributions to the National Insurance Scheme, employers' contributions to other pension schemes together with redundancy payments and compensation payments covering, for example, injury.

10. Please provide the **number of employees** working for your organisation during financial years 2011/12, 2010/11 and 2009/10, broken down by:
 - a. Full-time employees
 - b. Part-time employees;
 - c. Total employment, including sole proprietors, working directors etc.

11. Please provide the **number of volunteers** (if any) working for your organisation during financial years 2011/12, 2010/11 and 2009/10.

If possible, please also provide the number of hours worked 'on average' per volunteer per week.

12. Please provide the total **external expenditure** of your organisation during financial years 2011/12, 2010/11 and 2009/10.

This is the amount spent on intermediate inputs required by your organisation to carry out its activities; this may include heating or advertising, for example.

13. Please provide a **breakdown** of your organisation's **total external expenditure**. Percentages or absolute amounts (in **thousands of pounds** sterling) would suffice.

In order to ensure comparability with official national accounts, we would like information relating to **financial year 2010/11**. However, we welcome any information you are able to provide.

We would welcome any context you are willing to provide, especially if things have changed dramatically since or leading up to the year(s) for which you are able to provide data.

Note: if you are uncertain about where an item of external expenditure should be categorised, please consult the attached colour-coded spreadsheet which provides the relevant disaggregation of these broad categories. This spreadsheet was attached to the email which invited you to take part in this survey.

Broad goods and services categories (SIC one-digit)	Absolute or percentage share of total external spend
Agriculture, forestry and fishing	
Mining and quarrying	
Manufacturing	
Electricity, gas, steam and air-conditioning supply	
Water supply; sewerage, waste management	
Construction	
Wholesale and retail trade, repair of motor vehicles	
Transportation and storage	
Accommodation and food service activities	
Information and communication	
Financial and insurance activities	
Real estate activities	
Professional, scientific and technical activities	
Administrative and support service activities	
Public administration and defence; compulsory social security	

Broad goods and services categories (SIC one-digit)	Absolute or percentage share of total external spend
Education	
Human health and social work activities	
Arts, entertainment and recreation	
Other service activities	
Activities of households	

Please confirm which year the above information pertains to. Please also provide any comments or context regarding your supply chain expenditures.

14. Please provide total **capital expenditure** by your organisation during financial years 2011/12, 2010/11 and 2009/10. Please also provide average capital expenditure over the last five years.
15. Please provide details of any **public funding your organisation received** from Arts Council England and/or from other sources during financial years 2011/12, 2010/11 and 2009/10, and in the previous 2 years.
16. Please provide details of the **types and amounts** of each type of **tax paid** to central and local government in the financial years 2011/12, 2010/11 and 2009/10, including:
 - Business rates
 - Capital gains tax
 - Corporation tax
 - Employer's national insurance contributions
 - Value added tax (VAT)
 - Other (please specify)
 - Total tax paid
17. Please provide details of the **types and value of assets, excluding cultural assets** (such as art work), under your organisation's ownership and an approximate depreciation charge posted to your profit & loss statement. Note: a copy of your 2011/12, 2010/11 and/or 2009/10 profit & loss and balance sheet would suffice.

Section 3: Questions about your organisation's activities

We would welcome any and as much information as you can provide in answer to the following questions.

18. Please provide an estimate of your **total visitor/audience numbers** for the financial years 2011/12, 2010/11 and/or 2009/10.
19. Please provide details of the **composition of your visitors/audiences** by indicating, if possible, the number or proportion that were:
 - From your own **region** (e.g., North West, Yorkshire and Humber, South East, London);

- From **elsewhere in the UK**;
- **International** visitors

20. What functions in the list below does your organisation fulfil?

- Performance venue
- Gallery/museum
- Cultural centre
- Heritage site
- Artist live-work space
- Education providers
- Community hub/venue
- Production of art
- Other (please provide details)

21. Do you provide any support to **local artists**, or other **creative commercial businesses** in the local area? We are particularly interested in the provision of networking space, such as the organisation of conferences, seminars, workshops or other knowledge sharing opportunities, either online or physically.

Please provide the number and details of any **educational programmes** that your organisation is involved in, including their aims, scope, participation and frequency, and the extent to which they are deemed successful. These may involve both **formal** and **informal education** programmes, for example:

- Organised school visits
- Provision of resources for teachers, either online or physical
- Link programmes or partnerships with schools, colleges or universities, work-placement opportunities, mentoring or talent-brokerage schemes
- Non-curriculum cultural education
- Workshops, instruction or public seminars of an educational nature

22. Is your organisation involved in any **local regeneration networks**, or has it had involvement in such networks in the past? These might include Local Enterprise Partnerships, Regional Development Agencies and other local authority groups. What is / was the nature of this involvement?

23. Please provide details of the **buildings** and **physical spaces** in which your organisation operates, including:

- Whether you occupy or utilise any **previously-unused** buildings or spaces that have been regenerated
- Whether any physical locations or buildings have undergone **regeneration** due to your organisation's activities

24. Please take a moment if possible to briefly describe what role you believe your organisation plays in the local community.

--END OF SURVEY--

Thank you for taking part in this survey, and for contributing to our research. The information you have provided will be used to inform economic modelling and analysis of the full impacts of the arts and cultural sector in the UK.

Please use this sheet, and any additional sheets you may require, to continue any answers from earlier in the questionnaire. If you have done so, please note which questions they are responses to.

Appendix V: Linear regression analysis of the effect of cultural density on house prices

To investigate the relationship between cultural density and house prices, we carried out linear regression analysis using the variables listed in Table 19 below.

Table 19: Variables used in our linear regression analysis

Variable	Description	Data source
House prices	Average house prices from each UK local authority (seasonally adjusted) in January 2013	Land Registry House Price Index
Location quotient of cultural density	A measure of the relative number of cultural institutions per 1,000 people in each local authority. Values less than one indicate that an area is less culturally dense than the UK average; values greater than one indicate that an area is more culturally dense than the average local authority	Culture24 database of arts and culture attractions in the UK, as of February 2013, Cebr analysis
Areas of green space	Area within local authority boundaries taken up by parks, gardens and other green spaces, in thousands of square metres, 2005	Generalised Land Use Database, 2005, Office for National Statistics
Areas of water	Area covered by water within local authority boundaries, including rivers, lakes, reservoirs and coast	Generalised Land Use Database, 2005, Office for National Statistics
Access to transport	Area of rail multiplied by area of road; an imperfect measure, as railway is not necessarily accessible; data on number of stations would have been preferable, but was not available	Generalised Land Use Database, 2005, Office for National Statistics, Cebr analysis
Proportion of population with a degree	Some studies suggest that demand for culture is linked to educational attainment, implying that cultural facilities may be more likely to locate in areas with more educated people. As people with degrees may also earn more, and house prices in these areas may be more expensive, we control for the proportion of the population with this level of education	Census 2011, Office for National Statistics, Cebr analysis
Average age	Mean age within population of local authority; income may vary with age, and so house prices may be higher in areas with a high population of old people or families, and lower in areas with a younger population	Census 2011, Office for National Statistics
Vacancy Rate	Percentage of properties (commercial	Commercial and Industrial Property Vacancy Statistics, 2005, Office for

Variable	Description	Data source
	and residential) vacant	National Statistics
Average income per capita	The average amount of income left after tax per person, at current prices	Gross Disposable Household Income, 2010, Office for National Statistics, Cebr analysis
London	As London house prices are significantly higher than those elsewhere in the country, and some London boroughs have exceptionally high levels of cultural density, we allow for a London-specific effect. It must also be recognised that the Greater London housing supply is heavily constrained by the Green Belt.	

We also considered the proportion of the population with a long-term limiting illness or disability, the number of recorded crimes per 1,000 people and areas of derelict land or buildings, but found that these did not have a statistically significant effect on house prices. They were thus excluded from the final analysis.

We attempted to investigate the impact of cultural density on indices of multiple deprivation, which give a rounded picture of crime, the health of the population, access to transport, quality of the environment, educational attainment and employment. These models did not present any interesting results. It is likely that the relationship between economic and social deprivation and access to the arts and culture is too complex to be assessed using these statistical techniques.

Multiple linear regressions allow the effects of changes in one factor on a variable, like house prices, to be isolated, by holding constant the effects of other things we think may affect this variable. The relationship between two or more explanatory variables and a response variable is modelled by fitting a linear equation to observed data. In the Ordinary Least Squares model used here, this line is fitted to minimise the sum of the squares of the vertical deviations from the fitted equation.

The full results of our analysis can be found in the Table 18 below.

Table 20: Regression results

Variable	Coefficient	Standard error	t-statistic	Probability
Constant	-301368.2	74361.01	-4.0528	0.0001
Cultural density (location quotient)	26816.65	5681.85	4.7200	0.0000
London	89776.37	10699.31	8.3909	0.0000
Proportion of population educated to degree level	477894.5	63360.42	7.5425	0.0000
Average income per capita	13.948	1.3079	10.6640	0.0000
Average age of occupant	2612.252	1730.005	1.5100	0.1341
Access to transport	0.000094	0.000193	-0.4858	0.6282
Area of green space	-0.0124	0.00711	-1.7506	0.0830
Area of water	-0.2075	0.21081	-0.9842	0.3273

Variable	Coefficient	Standard error	t-statistic	Probability
Vacancy rate	1067.258	1059.708	-1.0071	0.3162
	-0.000103	0.000322	-0.3186	0.7507
R-squared	0.956798			
Number of observations	113			
<i>Standard errors and covariance are white heteroskedasticity¹⁹³ consistent</i>				

Source: Culture24, Cebr analysis

The coefficient for cultural density is the effect we are interested in and suggests that holding constant the proportion of the population who are educated to degree level, average income per capita, average age of occupant, access to transport, areas of green space and water and the vacancy rate, doubling cultural density compared to the UK average increases house price by £26,816. Statistical testing tells us that we can be more than 99 per cent certain that cultural density has some effect on house prices. As our model showed signs of heteroskedasticity, we use White heteroskedasticity consistent standard errors and covariance to ensure the t-statistics reported are accurate.

This analysis, however, is only cross-sectional. It assesses how house prices vary across areas with different levels of cultural provision. However, it does not tell us anything about how an area's house prices can vary over time, as its cultural density is altered. While we know that house prices are higher where cultural density is higher, this may be because cultural density is higher where people are more affluent, and houses are accordingly more expensive.

Although the Culture24 database provides a very detailed snapshot of cultural institutions in the UK at present, it is relatively new, and cannot facilitate the measurement of changes in cultural density over time. This meant that we were unable to investigate this relationship over time. This data must be collected over a significant time period if the impacts of cultural density on house price dynamics are to be more fully understood. We are not aware of what future plans there are for this database, but it needs to be maintained and made accessible if it is to be useful for this kind of assessment.

¹⁹³ Heteroskedasticity arises where the modelling errors or residuals turn out to be correlated with the effects being modelled. This can invalidate statistical tests of significance that assume that these are random and normally distributed.

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