Creative Industries
Policy & Evidence Centre
Led by nesta

Discussion Paper 2019/01

Mind the Gap

Regional Inequalities in the UK's Creative Industries

Bruce S. Tether

September, 2019

Alliance Manchester Business School,
University of Manchester and
Creative Industries Policy and Evidence Centre

ISBN: 978-1-913095-14-7

Supported by Arts & Humanities Research Council | UK Research and Innovation INDUSTRIAL STRATEGY

About the Creative Industries Policy and Evidence Centre

The Creative Industries Policy and Evidence Centre (PEC) works to support the growth of the UK's Creative Industries through the production of independent and authoritative evidence and policy advice.

Led by Nesta and funded by the Arts and Humanities Research Council as part of the UK Government's Industrial Strategy, the Centre comprises of a consortium of universities from across the UK (Birmingham; Cardiff; Edinburgh; Glasgow; Work Foundation at Lancaster University; LSE; Manchester; Newcastle; Sussex; Ulster). The PEC works with a diverse range of industry partners including the Creative Industries Federation.

For more details visit http://www.pec.ac.uk and @CreativePEC

About the author

Bruce Tether is Professor of Innovation Management and Strategy at Alliance Manchester Business School within the University of Manchester. He is also the Research Director of the Policy and Evidence Centre for the Creative Industries. Originally an economic geographer (graduating from the University of Newcastle upon Tyne in 1989), Bruce subsequently specialised in innovation, undertaking his PhD at the Science Policy Research Unit (SPRU) at the University of Sussex, before embarking on an academic career mainly in Manchester, but also including periods at Warwick Business School and Imperial College Business School. Bruce's present research focuses mainly on design, and design based innovation, creative professional services (including architecture practices and design consultancies) and the regional distribution of creative and professional service activities.

He can be contacted by email at bruce.tether@manchester.ac.uk

Bruce S. Tether

Alliance Manchester Business School, The University of Manchester, Booth Street West, Booth Street East, Manchester M13 9PL; bruce.tether@manchester.ac.uk)

Bruce Tether is also the Research Director of the PEC

Abstract

This paper uses official statistics published by the Department for Digital, Culture, Media and Sport to examine the regional distribution of the Creative Industries by employment and economic output. While the Creative Industries have become a substantial sector within the UK economy, there are very substantial differences in the regional distribution of these industries. Furthermore, while employment in the Creative Industries is disproportionately located in London and, to a lesser extent, the South East, the economic output of these activities is even more concentrated in London and the South East. In combination, these findings imply that there are very substantial differences in labour productivity among those working in these industries in the different regions of the UK. Moreover, the evidence suggests that both employment and productivity in the Creative Industries are growing in London (and the South East) at a much faster rate than in the rest of the UK. Indeed, if employment growth in London and the South East continues on trend, then employment growth in the rest of the UK would have to increase fivefold over its current trend to catch up in twenty years. Furthermore, in relation to labour productivity, the official statistics imply that in order to catch-up with the South East output per person employed in the rest of the UK (excluding London and the South East) would have to grow by three percentage points more than in the South East for twenty years. While, through its Industrial Strategy, the government is committed to narrowing the gap, the analysis in this paper shows that this will be a very substantial challenge, which will require a very ambitious and long-term policy agenda.

Key Words: Creative Industries, Regions, Inequalities, Employment, Gross Value Added, Productivity

---

1. Introduction

This paper provides an overview of the direct economic contributions, in terms of employment, value added and, by implication, labour productivity[1] that the Creative Industries (C.I.s) make to the regions of the UK, including the nine English regions, Scotland, Wales and Northern Ireland.[2] After providing a brief overview of the significance of the C.I.s to the UK economy as a whole in Section 2, the paper examines the extent to which these industries are (un)evenly distributed among the regions of the UK. Section 3 analyses the most recent data from the Department for Digital Culture, Media and Sport (DCMS), while Section 4 analyses changes since 2010/11. Section 5 provides an analysis of the implied labour productivity differences by regions and sub-sectors, and Section 6 concludes the paper, summarising the main findings and contextualising the issues for public policy.

The paper draws entirely on official statistics provided by the DCMS in its Sector Economic Estimates; these estimates are based on Office for National Statistics (ONS) data sources.[3] It aims to provide a high level, factual overview of the regional distribution of the Creative Industries in the UK and to raise questions for policy that follow.[4] The paper treats each sub-sector within the Creative Industries as a single entity, using the DCMS's Standard Industrial Classification (SIC) code-based classifications, albeit distributed across the regions of the UK.[5] No attempt is made to disaggregate sub-sectors or regions further. Future papers from the PEC will undertake more detailed, disaggregated analyses, and are likely to consider alternative approaches to identifying creative industries than those based on the SIC.

Relative to the size that would be expected if the Creative Industries were distributed in accordance with economic activity in the UK as a whole, the paper reports wide regional inequalities in the size of the Creative Industries in the regions of the UK. This inequality varies by sub-sector. It is, for example, much larger in the 'Film, TV, video, radio and photography' sub-sector than in the 'Design and designer fashion' or 'Architecture' sub-sectors. In the context of the UK government's objective to not only encourage growth in the Creative Industries but also to reduce regional inequalities in these industries, two major concerns are: 1. That in recent years regional inequalities in these industries have generally been increasing, not decreasing; and 2. That there are much greater inequalities in economic output by region than in employment by region, which implies very substantial differences in the labour productivity of the Creative Industries by region. The paper ends by observing that 'narrowing the gap' between the size and productivity of the Creative Industries in London and the South East of England vis-à-vis the rest of the UK is a major policy challenge that is not amenable to a 'quick fix'. Indeed, even with an ambitious and effective set of policies, it is unlikely that the rest of the UK would catch up in less than twenty years. In order to start narrowing the gap, we need a fuller understanding of the sources of these inequalities, and to devise long-term policies aimed at reducing them.

---

[1] At the time of writing, the most recent data on employment relates to 2018, while the most recent data on value added relates to 2017. Employment data is available from 2011, and value added data from 2010.

[2] i.e., at the NUTS 1 level of analysis.

[3] Which is available here: https://www.gov.uk/government/collections/dcms-sectors-economic-estimates [Accessed 26 July 2019]

[4] Previous analyses of the geography of the UK's creative industries have been undertaken by (inter alia) Chapain et. al. (2010); Mateos-Garcia and Bakhshi (2016) and Mateos-Garcia et. al. (2018).

[5] Combinations of regions and sub-sectors, for example Architecture in the Scotland, are referred to as a sub-sector region "cells".

2 An Overview of the economic significance of the Creative Industries in the UK

Since the formation of the Department for Media Culture and Sport by the Blair Government in 1997, the UK Government has recognised economic and socio-cultural significance of "the Creative Industries". Initially, these were conceptualised as "those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property" (DCMS, 2001). More recently, they have been identified as a set of industries in which a relatively high proportion of the workforce is engaged in creative occupations (Bakhshi et al., 2013). The current official statistics, based on the Standard Industrial Classification (2007), recognise 32 'creative industries' at the four-digit level. The DCMS Sector Economic Estimates aggregate these into nine 'sub-sectors'. Appendix Table 1 provides a list of the 32 industries and their grouping into these nine sub-sectors. This paper analyses the Creative Industries as a whole and at the sub-sector level, making no attempt to disaggregate further. Furthermore, this paper does not contest the veracity of using the SIC to identify creative businesses, and their aggregation into nine sub-sectors, or the "Creative Industries" sector as a whole.

The Creative Industries are a major source of employment in the UK; they employ over 2 million people, including around 600,000 in self-employment (Table 1). This represents about 6.2% of all employment in the UK, or about one-in-sixteen of employed people. The 'IT, software and computer services' sub-sector accounts for over a third of all C.I. employment, and is by far the largest sub-sector. 'Crafts', which employs around 9,000, is much the smallest.

Self-employment accounts for about a third of C.I. employment. This is twice the proportion of self-employment in the economy as a whole. Self-employment is particularly high in 'Music and the arts' and in 'Design and designer fashion', where more than half of those employed are self-employed.

Employment in the C.I.s has also grown rapidly in recent years, increasing by 30% since 2011. This is about three times the rate of growth of employment in the economy as a whole. Employment, including self-employment, has grown fastest in the 'Design and designer fashion' and in 'IT, software and computer services' sub-sectors. Not all C.I. sub-sectors have grown over this period however; employment has declined in both 'Publishing' and 'Museums, galleries and libraries'.

Table 1: Employment (including Self-Employment) in Creative Industries and sub-sectors

Sub-sector	Employment in, 2018	Of which Self-employed (%)	% of All UK Employment	% change, 2011-2018
Adverting and marketing	195,000	22%	0.6%	31.8%
Architecture	111,000	28%	0.3%	18.1%
Crafts	9,000	n.a.	<0.1%	0.0%
Design and designer fashion	163,000	55%	0.5%	59.8%
Film, TV, radio, photography	245,000	40%	0.7%	16.1%
IT, software & computer services	733,000	18%	2.2%	51.8%
Publishing	199,000	33%	0.6%	-5.7%
Museums, galleries, libraries	89,000	n.a.	0.3%	-2.2%
Music, performing & visual arts	296,000	72%	0.9%	39.0%
All Creative Industries	2,040,000	33%	6.2%	30.6%
Whole economy	33,170,000	16%	100.0%	10.1%

Source: DCMS Sectors Economic Estimates 2018: Employment - Table 21 (published 26-6-2019)

In terms of the economic value of these activities, the Creative Industries collectively generated over £100bn in Gross Value Added in 2017 (in current prices), or around 5.5% of the UK's total economic output. To put this into illustrative perspective, the car manufacturing industry[6] directly contributed £15.2 billion to the UK economy in the same year (Brown and Rhodes, 2018), less than a fifth of the direct contribution of the C.I.s. Manufacturing as a whole directly accounted for about 10% of the UK's GVA, which is roughly double the direct economic contribution of the C.I.s.

As with their employment, the Creative Industries sub-sectors vary widely in size. 'IT services, software and computer services' is again much the largest; this generated over £40 billion in Gross Value Added in 2017. 'Crafts' is again much the smallest, generating almost £300 million.

Table 2: Gross Value Added (GVA) in current prices for Creative Industries and sub-sectors

Sub-sector	Gross Value Added, 2017, £m	% of UK GVA, 2017	GVA per person employed (£'000)	GVA % change, 2010-2017
Adverting and marketing	13,302	0.7%	70.0	113.9%
Architecture	3,898	0.2%	37.5	69.6%
Crafts	298	<0.1%	29.8	12.6%
Design and designer fashion	3,949	0.2%	24.7	100.6%
Film, TV, radio, photography	16,709	0.9%	64.0	30.5%
IT, software, computer services	40,620	2.2%	57.1	59.9%
Publishing	11,751	0.6%	61.2	13.4%
Museums, galleries and libraries	1,451	0.1%	15.1	8.1%
Music, performing & visual arts	9,547	0.5%	33.7	68.6%
All Creative Industries	101,526	5.5%	50.6	53.1%
Whole economy	1,839,924	100.0%	55.9	28.7%

Source: DCMS Sector Economic Estimates Provisional 2017: GVA Sub-sectors (published 28-11-2018)

As with employment, the Creative Industries sub-sectors have grown at very different rates since 2010. The economic value of the output of 'Advertising and marketing', and 'Design and designer fashion' has doubled,[7] while that of 'Museums, galleries and libraries' has increased by less than 10%.[8] As a whole, the economic value of the output of the Creative Industries has grown at almost twice the rate of the UK economy as a whole (Table 2).

The DCMS does not publish estimates of productivity in its Sector Economic Estimates. It is notable, however that the published GVA and employment estimates imply that economic output per person employed – a measure of labour productivity - varies may vary very widely across the C.I. sub-sectors. Averaging £50,600, this is highest in 'Advertising and marketing' (at

[6] Or more precisely the 'motor vehicle manufacturing industry'.
[7] Note that official statistics measure the output of the Creative Industries in current rather than constant prices, meaning that there is no adjustment for inflation.
[8] The validity of the concept of "Value Added" is questionable in the context of 'Museums, galleries and libraries', most of which are free to enter. For a fuller discussion, see CEBR (2019). Official values are nonetheless estimated, and these are analysed in this paper.

£70,000) and lowest in 'Museums, etc.' (at £15,100) (Table 2). Labour productivity is discussed in Section 5.

The Creative Industries also make a valuable contribution to the UK economy by generating overseas earnings. The UK has a very substantial trade deficit in goods, which is partially offset by a trade surplus in services, including services provided by the Creative Industries (Table 3). Notably, the value of Creative Industries' exports is nearly twice the value of C.I. imports. The exports to imports ratio is particularly high in 'Architecture', 'Design and designer fashion', and 'Publishing', sub-sectors in which the value of exports exceeds the value of imports by over four times.

Table 3: Exports and Imports of Creative Industries Services including by sub-sectors

Sub-sector	Exports of Services (£m) 2016	Imports of Services (£m) 2016	Trade Balance (£m), 2016	Exports to Imports ratio by value
Adverting and marketing	3,949	1,690	2,259	2.3
Architecture	635	79	556	8.0
Crafts			-	
Design and designer fashion	461	103	358	4.5
Film, TV, video, radio, photography	7,734	4,303	3,431	1.8
IT, software and computer services	16,919	10,713	6,206	1.6
Publishing	1,983	455	1,528	4.4
Museums, galleries and libraries			-	
Music, performing and visual arts	1,065	463	602	2.3
All Creative Industries	32,764	17,836	14,928	1.8
All Services Exports and Imports	277,039	165,477	111,562	1.7

Source: DCMS Tables 7-24: Exports and imports of services by sub-sector (published August 2019)[9]

Collectively, these statistics paint an impressive picture of the economic contribution of the Creative Industries. Because of their collective mass, and because they are likely to continue to grow faster than the economy as a whole, it makes sense for the UK government to "look after" these industries, which is has been doing since the establishment of the DCMS and, more recently, by implementing an Industrial Strategy which includes 'the Creative Industries Sector Deal' (HM Government, 2018).

3. The (Uneven) Regional Distribution of the Creative Industries in the UK

Having provided an overview of the economic significance of the Creative Industries to the UK economy as a whole, this section now disaggregates this picture, reporting the distribution of the C.I.s as a whole and the constituent sub-sectors across the 12 (NUTS 1) regions of the UK (i.e., nine English regions plus Scotland, Wales and Northern Ireland).[10]

[9] Available here - https://www.gov.uk/government/statistics/dcms-sectors-economic-estimates-2017-trade (Accessed 13-9-2019)

[10] Note that the UK's regions are very different in size, both geographically and economically. London is the largest region economically, providing employment to over 5.3 million people, more than six times as many as are employed in the smallest region economically, Northern Ireland.

The geographical distribution of industries can be examined using various spatial units of analysis, including travel to work areas, city regions, local authority areas, local enterprise partnership areas, among others. Currently, there is considerable interest in clusters, which are typically manifest in fairly small geographical areas, much smaller than regions or indeed cities. For the purpose of this report, NUTS 1 regions have been adopted for several reasons.

One is that three regions (Scotland, Wales and Northern Ireland) are areas of devolved administration, which means that policy makers in these regions may be interested in comparing their area's performance with that of the UK as a whole, and other regions of the UK.

Another is that these geographical units are well established, and moreover have remained consistent over time (since the mid-1990s). This means they are both well understood and that data is available over time.

A further advantage for the present purpose is that the cross-tabulation of nine sub-sectors and twelve regions provides a reasonably small matrix for each year (9 x 12 = 108 'cells'), which facilitates discussion of the findings at the level of cells.

Among the disadvantages of using regions as the unit of analysis is that differences within regions – that is intra-regional inequalities - are obscured. The Creative Industries (and sub-sectors thereof) may be very strong in certain places within a region that, overall, has a relatively small C.I. sector. And none of the UK's regions is homogeneous. For example, while overall the creative industries are particularly strong in London, this does mean that they are strong throughout London. The nature of the UK's regions also differs, with London in particular being distinct from the others, each of which includes large rural areas as well as urban areas.

There is no ideal level of analysis for examining the geography of the creative industries. The twelve NUTS 1 level regions are appropriate for our purpose, which is to analyse the 'big picture'.

Table 4: Employment in the Creative Industries and sub-sectors by Region, 2018

	London	South East	East of England	South West	West Midlands	East Midlands
Advertising & mkt'ing	99.0	16.4	10.5	11.1	5.5	6.7
Architecture	31.0	11.6	9.5	10.7	8.7	6.4
Crafts	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Design	48.7	24.5	16.8	13.2	10.6	10.4
Film, TV, video, etc.	97.3	28.6	11.8	16.4	11.8	6.8
IT, software, etc.	212.3	149.3	56.3	56.5	45.0	32.8
Publishing	83.2	31.6	17.3	12.1	5.9	8.5
Museums etc.	27.5	9.0	n.a.	n.a.	n.a.	n.a.
Music and arts	94.9	37.4	21.3	31.4	10.1	13.9
All Creative Industries	695.1	309.4	150.2	155.5	104.0	88.9
All Sectors	5,361.3	4,433.1	2,875.9	2,895.2	2,793.1	2,261.6
Location Quotient	2.11	1.13	0.85	0.87	0.61	0.64

	North West	Yorkshire & Humber	North East*	Scotland	Wales*	Northern Ireland*
Advertising & mkt'ing	14.8	9.5	*2.8*	8.3	*3.5*	*2.1*
Architecture	n.a.	n.a.	*2.4*	7.2	*3.3*	*2.1*
Crafts	n.a.	n.a.	*0.2*	n.a.	*0.4*	*0.1*
Design	9.5	9.1	*3.8*	8.7	*3.6*	*1.7*
Film, TV, video, etc.	21.7	14.2	*4.5*	19.9	*8.4*	*4.8*
IT, software, etc.	56.4	32.6	*12.9*	39.9	*13.5*	*8.1*
Publishing	11.0	10.5	*3.4*	9.4	*4.4*	*2.1*
Museums etc.	9.6	6.0	*2.7*	8.6	*8.9*	*2.9*
Music and arts	24.7	15.8	*6.5*	20.6	*5.9*	*2.6*
All Creative Industries	157.8	107.6	46.4	122.9	56.2	30.0
All Sectors	3,528.7	2,631.6	1,187.5	2,688.2	1,447.3	833.3
Location Quotient	0.73	0.66	0.64	0.74	0.63	0.59

*Source: DCMS Sector Economic Estimates 2018: Employment, Creative Industry Sub-sectors (Published: June 2019). * Employment by sub-sector for the North East, Wales and Northern Ireland are averages over the 2011-2018 period. The Creative Industries total, and All Sectors totals are for 2018. n.a. - data for some sub-sector region cells is not available due to rules of disclosure.*

The distribution of employment (including self-employment) by region and C.I. sub-sector is provided in Table 4. Location Quotients are calculated to provide a benchmark against which to compare the size of the Creative Industries as a whole in each region. A Location Quotient (LQ) is the share of an industry's activity (here measured by employment) that is located within an area (here a NUTS 1 region), divided by that area's share of all activities. Mathematically, it is given by the following formula where, $e_{i,r}$ is employment in a particular industry *i* and in a particular region *r*:

$$LQ_{i,r} = \frac{\frac{e_{i,r}}{\sum_r e_{i,r}}}{\frac{\sum_i e_{i,r}}{\sum_i \sum_r e_{i,r}}}$$

When a Location Quotient (LQ) is greater than one, the region's share of the industry in question is larger than that region's share of all industries' activities. When the LQ is below one, the region's share of the particular industry is smaller than the region's share of all industries. If the LQ is one, then that region's share of the industry in question exactly matches its share of all industries' activities. Because Location Quotients are ratios of two shares, if one or more LQs are greater than one (indicating a relative strength), then at least one other LQ must be lower than one (indicating a relative weakness).

Location Quotients are a relative measure that show the geographical unevenness of the distribution of industries. Unevenness is to be expected, particularly when very different areas such as London and Scotland are being compared. Furthermore, unevenness is not necessarily bad. The aim here is to report the extent of unevenness, rather than to provide judgement.

London's employment based Location Quotient for the Creative Industries as a whole is 2.11[11], which means that London accounts for more than twice the employment in the Creative Industries than would be the case if employment in the C.I.s were distributed in accordance with overall distribution of employment by region in the UK.

London aside, the South East is the only region to have an LQ above one for the Creative Industries as a whole (1.13); this shows that the South East has 13% more people employed in the Creative Industries than would be "expected" if employment in these industries were distributed in accordance with the regional distribution of all employment.

All other regions have LQs below 1, the lowest of all being for Northern Ireland, at 0.59; Northern Ireland has about 60% of the number of people employed in the Creative Industries than would be the case if the distribution of employment in these industries matched the regional distribution of all employment in the UK. Put another way, Northern Ireland's employment in the Creative Industries would have to increase by about 70% (1/0.59 = 1.69) to match this region's share of all UK employment.

Table 5 reports employment-based Location Quotients for each CI sub-sector at the regional level;[12] these range from 3.15 (for 'Advertising and marketing' in London) to 0.34 (for Advertising and marketing' in the West Midlands). London has a little over three times the number of people as "expected" in Advertising and marketing', while this sub-sector employs just over a third of the "expected" number of people in the West Midlands.

The cells in Table 5 are colour coded to aid interpretation. The extremes are shown in blue and red: cells where the LQ is 2 or higher are shown in blue, while those where the LQ does not exceed 0.5 are coloured red. Blue cells therefore indicate regions where an industry employs at least twice the "expected" number of people, and red cells indicate regions that employs not more than half the "expected" number of people in the industry. Blue and red aside, green indicates cells where the LQ is at least one; and orange cells where the LQ is below one.

[11] 695,100 people are employed in the Creative Industries in London, which is almost 13% of London's employment. Across the UK as a whole, 2.04 million people are employed in the CIs, which is 6.15% of the 33.17m people employed in the UK. Dividing 12.97% by 6.15% gives 2.11

[12] Some LQs cannot be calculated because regional employment is not available due to disclosure rules.

Table 5: Employment-based Location Quotients by CI sub-sectors and Region, 2018

LQ ≥ 2	<2 to 1.5	<1.5 to 1.0	<1.0 to 0.67	<0.67 to >0.5	≤0.50

	London	South East	East of England	South West	West Midlands	East Midlands
Advertising & mkt'ing	3.15	0.63	0.62	0.65	0.34	0.50
Architecture	1.72	0.78	0.98	1.10	0.92	0.84
Crafts	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Design	1.85	1.13	1.19	0.93	0.77	0.94
Film, TV, video, etc.	2.45	0.87	0.56	0.77	0.57	0.41
IT, software, etc.	1.79	1.52	0.89	0.88	0.73	0.66
Publishing	2.59	1.19	1.00	0.69	0.35	0.62
Museums etc.	1.92	0.76	n.a.	n.a.	n.a.	n.a.
Music and arts	1.98	0.94	0.83	1.22	0.40	0.69
All Creative Industries	2.11	1.13	0.85	0.87	0.61	0.64
All Economic Sectors	1.00	1.00	1.00	1.00	1.00	1.00

	North West	Yorkshire & Humber	North East*	Scotland	Wales*	Northern Ireland*
Advertising & mkt'ing	0.72	0.62	0.41	0.52	0.41	0.42
Architecture	n.a.	n.a.	0.62	0.80	0.69	0.74
Crafts	n.a.	n.a.	0.47	n.a.	0.96	0.47
Design	0.55	0.70	0.65	0.66	0.50	0.41
Film, TV, video, etc.	0.83	0.73	0.51	1.00	0.79	0.77
IT, software, etc.	0.72	0.56	0.49	0.67	0.42	0.44
Publishing	0.52	0.67	0.47	0.59	0.51	0.42
Museums etc.	1.02	0.86	0.84	1.20	2.31	1.30
Music and arts	0.78	0.67	0.61	0.86	0.46	0.35
All Creative Industries	0.73	0.66	0.64	0.74	0.63	0.59
All Economic Sectors	1.00	1.00	1.00	1.00	1.00	1.00

*Source: Derived from data presented in Table 4. * Sub-sector location quotients the North East, Wales and Northern Ireland are based on average employment over the 2011-2018 period.*

London's employment-based Location Quotients exceed 1.5 for all sub-sectors for which data is available, and exceed 2 for three sub-sectors plus the Creative Industries as a whole. There are only two other regional sub-sector cells in which these employment-based LQs exceed 1.5: 'IT, software and computer services' in the South East, and 'Museums, galleries and libraries' in Wales.[13]

Red cells are far more prevalent, including five of the 12 regions for 'Advertising and marketing', six of the nine sub-sectors in Northern Ireland, and four of the nine in each of the North East and Wales.

As well as by employment, Location Quotients can be calculated using economic output (Gross Value Added). Table 6 reports these, using exactly the same colour coding scheme as before for the employment based LQs in Table 5. Note that whereas employment data were

[13] Note this may not be accurate for 2018, as employment in this sub-sector for Wales is only available as an average over the 2011-2018 period.

not available for some sub-sector region cells, data is available to enable the calculation of Location Quotients by Gross Value Added for the full set of cells.

Based on the value of economic output rather than employment, the range of Location Quotients is wider, being highest for the 'Film, TV, etc.' sub-sector in London (3.25) and lowest for the 'Advertising and marketing' sub-sector in Wales (0.13). London's 'Film, TV, etc.' sub-sector therefore generates over three times its "expected" economic output, while "Advertising and marketing' in Wales generates only about one eighth of the output that this industry would generate if its size in Wales matched the overall size of the Welsh economy, relative to the UK economy.

In this analysis there are six blue cells in total (one more than in the employment-based analysis), indicating Location Quotients of 2 or higher, with five of these - including the Creative Industries as a whole - pertaining to London. The remaining blue cell is 'Crafts' in the West Midlands. Red cells are much more prevalent than in the employment-based analysis. The Gross Value Added of the Creative Industries as a whole is not more than half its "expected level" in six of the twelve UK regions, and less than half the "expected level" in 46 of the 108 sub-sector region cells. This includes seven of the nine sub-sectors in the North East, and five of the nine in each of the East and West Midlands, Yorkshire and the Humber, Scotland and Wales.

Table 6: Gross Value Added-based Location Quotients by CI sub-sectors and Region, 2017

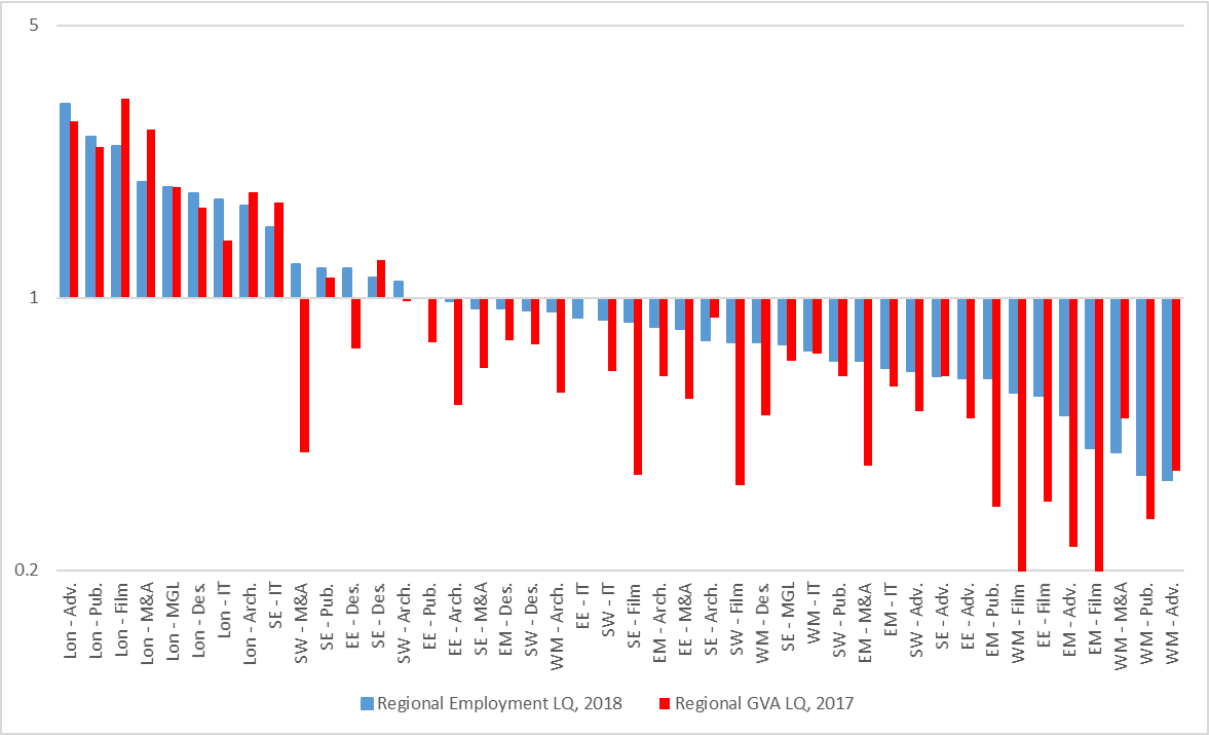
LQ ≥ 2	<2 to 1.5	<1.5 to 1.0	<1.0 to 0.67	<0.67 to >0.5	≤0.50

	London	South East	East of England	South West	West Midlands	East Midlands
Advertising & mkt'ing	2.83	0.63	0.49	0.51	0.36	0.23
Architecture	1.87	0.89	0.53	0.98	0.57	0.63
Crafts	0.94	1.14	1.91	0.90	2.59	0.57
Design	1.70	1.25	0.74	0.76	0.50	0.78
Film, TV, video, etc.	3.25	0.35	0.30	0.33	0.16	0.15
IT, software, etc.	1.40	1.76	0.99	0.65	0.72	0.59
Publishing	2.43	1.13	0.77	0.63	0.27	0.29
Museums etc.	1.92	0.69	0.40	0.75	1.12	0.37
Music and arts	2.70	0.66	0.55	0.40	0.49	0.37
All Creative Industries	2.17	1.13	0.71	0.57	0.50	0.42
All Economic Sectors	1.00	1.00	1.00	1.00	1.00	1.00

	North West	Yorkshire & Humber	North East	Scotland	Wales	Northern Ireland
Advertising & mkt'ing	0.63	0.35	0.20	0.30	0.13	0.26
Architecture	0.74	0.50	0.67	0.93	0.61	0.92
Crafts	0.40	0.56	0.24	0.70	0.41	0.57
Design	0.65	0.79	0.48	0.50	1.09	0.59
Film, TV, video, etc.	0.41	0.24	0.15	0.39	0.48	0.23
IT, software, etc.	0.75	0.53	0.44	0.65	0.22	0.73
Publishing	0.35	0.50	0.26	0.35	0.21	0.26
Museums etc.	0.54	0.88	0.60	1.20	0.61	0.68
Music and arts	0.51	0.25	0.34	0.46	0.41	0.30
All Creative Industries	0.60	0.44	0.35	0.52	0.32	0.49
All Economic Sectors	1.00	1.00	1.00	1.00	1.00	1.00

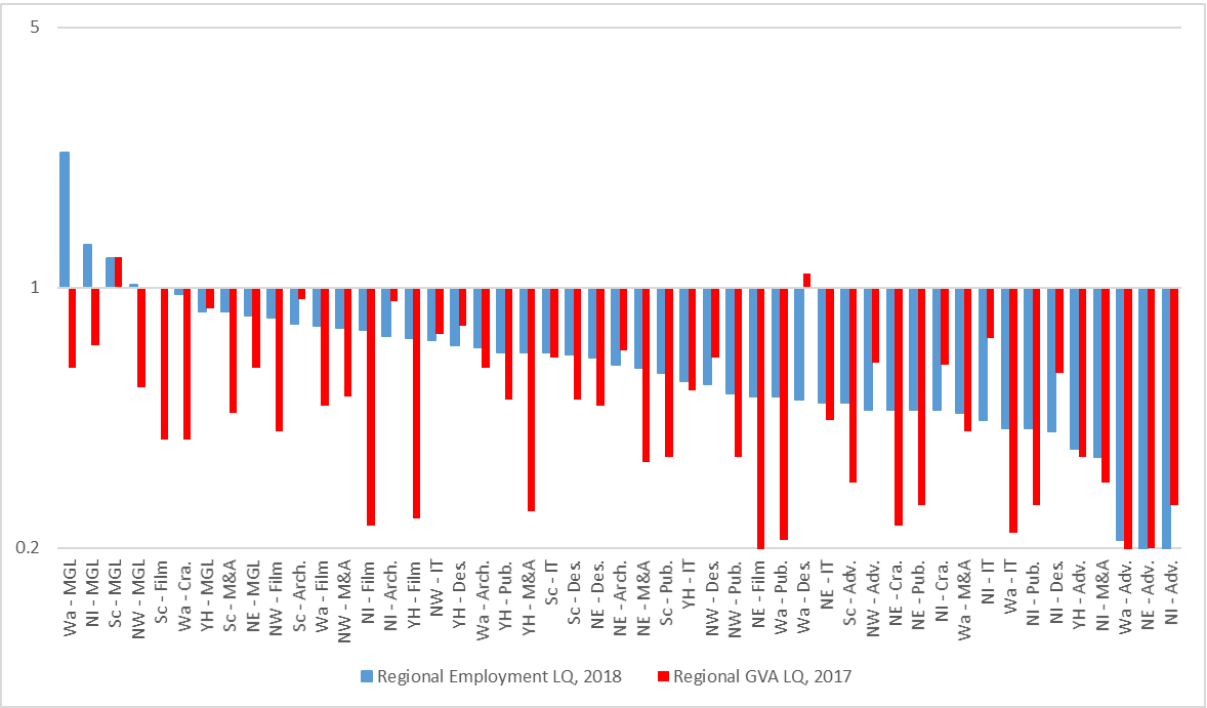
Calculated from data provided in DCMS Sector Economic Estimates 2017: Regional GVA Sub-sectors

Figure 1a: Employment- and GVA-based LQs for C.I. Sub-Sector and Regions: Southern England
(Sub-sector regions are ranked ordered left to right by their employment based LQs)



MGL is 'Museums, Galleries and Libraries', M&A is 'Music and the arts'

Figure 1b: Employment- and GVA-based LQs for C.I. Sub-Sector and Regions: Northern England, Scotland, Wales and Northern Ireland (Sub-sector regions are ranked by their employment LQs)



An interesting feature of the two sets of Location Quotients is how they compare. While the overall correlation between these two sets is high (at 0.85), there is a tendency for GVA-based LQ to be lower than the employment-based LQ when the latter is less than one. This is shown in Figures 1a and 2b. These distributions show that the economic value added of the creative industries tends to be more concentrated geographically than employment in these industries. The implication is that there are there are substantial differences in labour productivity (output per person employed, or per hour worked) between creative industries firms located in different regions. These differences will be examined further in Section 5, after an examination of the changes since 2010/11 in the regional distribution of the Creative Industries.

4. Changes over time in the Regional Distribution of the Creative Industries in the UK

Having presented an analysis based on the most recent data on the extent of regional inequalities in the distribution of the Creative Industries, this section examines the extent to which these inequalities have changed since 2010/11.

Table 7 reports the total employment in the Creative Industries in 2011 and in 2018 by region, the percentage change in this employment, and the share of total employment accounted for by the C.I.s. Perhaps surprisingly, employment in the Creative Industries grew fastest in relative terms in the North East of England, albeit from a small base. Also surprising is that employment in the Creative Industries grew at the second slowest rate in the South East of England, which, after London, has the highest share of employment in these industries.

Table 7: Change in total Creative Industries employment by Region, 2011 – 2018 (Regions ranked by declining absolute percentage change in C.I. employment)

	Creative Industries employment ('000)			Creative Industries share of all employment		
	2011	2018	% change	2011 (A)	2018(B)	B – A
All UK	1,561.7	2,040.3	30.6%	5.2%	6.2%	1.0%
North East	31.0	46.4	49.6%	2.8%	3.9%	1.1%
London	497.4	695.1	39.8%	11.2%	13.0%	1.8%
South West	117.5	155.5	32.4%	4.5%	5.4%	0.9%
East Mids.	67.3	88.9	32.2%	3.2%	3.9%	0.7%
Yorks. & H.	81.5	107.6	32.0%	3.4%	4.1%	0.7%
West Mids.	79.8	104.0	30.2%	3.2%	3.7%	0.5%
East of Eng.	117.7	150.2	27.6%	4.4%	5.2%	0.8%
North West	124.8	157.8	26.5%	3.8%	4.5%	0.7%
Wales	45.9	56.2	22.6%	3.4%	3.9%	0.5%
Scotland	101.6	122.9	20.9%	4.0%	4.6%	0.6%
South East	259.6	309.4	19.2%	6.3%	7.0%	0.7%
N. Ireland	29.5	30.0	1.6%	3.7%	3.6%	-0.1%

Source: Derived from DCMS Sectors Economic Estimates 2018: Employment - Table 22 (published 26-6-2019)

Employment in the Creative Industries grew by almost 40% in London, second only to the North East. The proportion of people employed in the Creative Industries also increased most in London, up 1.8% to 13%, which is more than double the proportion of people employed in the Creative Industries in the UK as a whole (6.2%).

Northern Ireland experienced the smallest growth in employment in the Creative Industries, an increase of 1.6%, far lower than that any other UK region, and Northern Ireland is the only region in which the Creative Industries' share of total employment declined, albeit marginally.

When disaggregated into sub-sectors employment growth between 2011 and 2018 presents a very inconsistent picture from which it is difficult to identify patterns. Table 8 reports the percentage change in employment over this period for each sub-sector region cell for which data is available. In every region, including London, at least one sub-sector experienced a decline in employment. In London's case this was the very small 'Crafts' sector. Furthermore, every sub-sector except 'Design' and 'IT, software, etc.' experienced a decline in employment in at least one region. And every sub-sector displayed high variations in employment growth. Employment in 'Architecture', for example, doubled in the West Midlands, but increased by just 2.7% in the East of England, and declined in Scotland. Employment in 'Music and the arts', meanwhile, more than doubled in both the East Midlands and the North West, but declined in the West Midlands and increased by only 3.1% in the South East. And employment in the small 'Crafts' sub-sector increased by over 200% in the North West, while remaining static in the East Midlands, and declining substantially in Scotland and the South West. Why these changes have arisen is beyond the scope of this paper. This pattern does however suggest considerable turbulence in these industries and perhaps instability in any regional advantages or disadvantages, particularly outside of London and the South East.

Table 8: Percentage Change in Employment by Creative Industry Sub-Sectors & Region, 2011-2018

Growth relative to that in the Creative Industries as a whole

≥4x	2x to 4x	Average to 2x	½ to <Average	0 to ½	<0

	London	South East	East of England	South West	West Midlands	East Midlands
Advertising & mkt'ing	42%	-7%	-7%	25%	20%	102%
Architecture	6%	16%	3%	50%	137%	-2%
Crafts	-14%	1%	73%	-79%	-29%	0%
Design	51%	70%	119%	80%	83%	45%
Film, TV, video, etc.	16%	8%	-30%	32%	80%	8%
IT, software, etc.	90%	28%	49%	50%	52%	54%
Publishing	22%	7%	20%	-30%	-40%	-12%
Museums etc.	5%	21%	n.a.	n.a.	n.a.	-63%
Music and arts	28%	3%	29%	65%	-11%	148%
All Creative Industries	39.8%	19.2%	27.6%	32.4%	30.2%	32.2%
All Economic Sectors	20.5%	6.9%	6.9%	10.1%	12.9%	9.0%

	North West	Yorkshire & Humber	North East	Scotland	Wales	Northern Ireland
Advertising & mkt'ing	18%	75%	n.a.	26%	n.a.	n.a.
Architecture	22%	71%	n.a.	-7%	n.a.	n.a.
Crafts	212%	82%	n.a.	-70%	n.a.	n.a.
Design	4%	71%	n.a.	41%	n.a.	n.a.
Film, TV, video, etc.	29%	55%	n.a.	28%	n.a.	n.a.
IT, software, etc.	17%	45%	n.a.	52%	n.a.	n.a.
Publishing	-6%	-20%	n.a.	-47%	n.a.	n.a.
Museums etc.	18%	-35%	n.a.	9%	n.a.	n.a.
Music and arts	120%	43%	n.a.	64%	n.a.	n.a.
All Creative Industries	26.5%	32.0%	49.6%	20.9%	22.6%	1.6%
All Economic Sectors	7.3%	9.7%	6.1%	4.9%	8.1%	4.1%

Calculated from data provided in DCMS Sector Economic Estimates 2018: Employment by Region. Yearly data at the sub-sector level is not available for the North East, Wales or Northern Ireland.

Figure 2: Creative Industries Gross Value Added as a share of Total GVA in Selected Regions

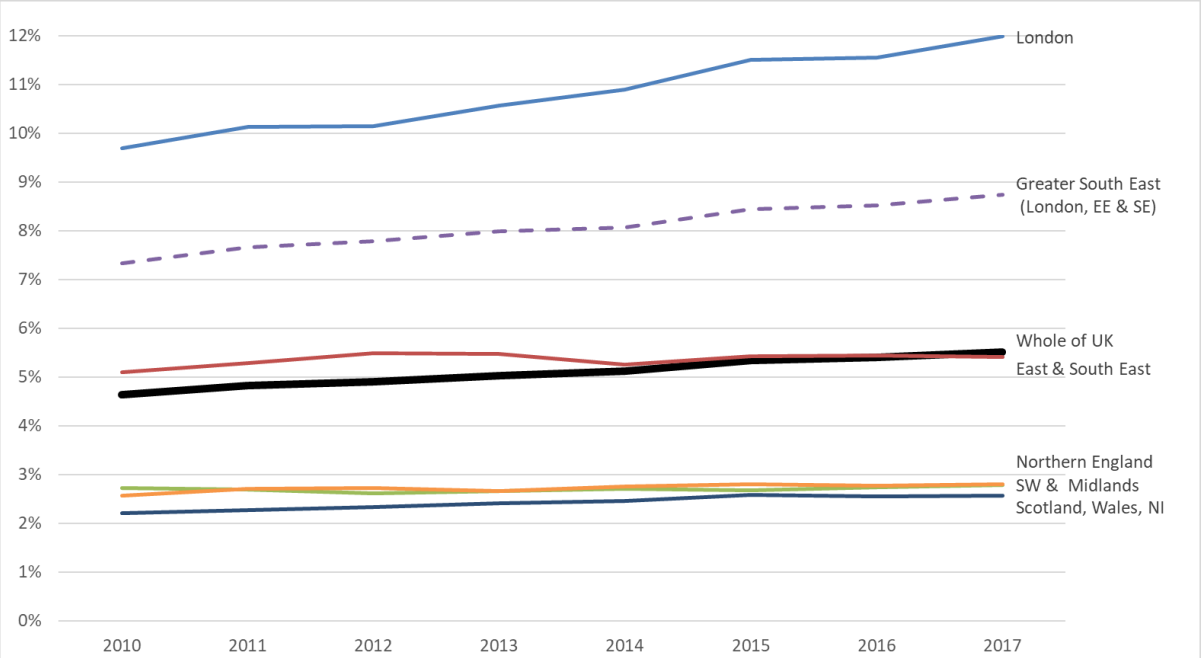


Table 9: Percentage Change in GVA by Creative Industry Sub-Sectors & Region, 2010-2017

Growth relative to that in the Creative Industries as a whole

≥4x	2x to 4x	Average to 2x	½ to <Average	0 to ½	<0

	London	South East	East of England	South West	West Midlands	East Midlands
Advertising & mkt'ing	189%	42%	75%	46%	54%	26%
Architecture	135%	61%	3%	11%	93%	25%
Crafts	-26%	307%	14%	53%	-13%	57%
Design	98%	105%	39%	142%	82%	64%
Film, TV, video, etc.	37%	22%	31%	12%	-2%	-14%
IT, software, etc.	98%	33%	75%	37%	31%	52%
Publishing	23%	7%	20%	14%	20%	-15%
Museums etc.	21%	-15%	-45%	93%	40%	-18%
Music and arts	96%	23%	69%	-21%	69%	50%
All Creative Industries	73%	31%	54%	27%	35%	33%
All Economic Sectors	40%	28%	30%	24%	34%	28%

	North West	Yorkshire & Humber	North East	Scotland	Wales	Northern Ireland
Advertising & mkt'ing	16%	48%	124%	35%	-5%	67%
Architecture	35%	17%	103%	65%	86%	-4%
Crafts	61%	-7%	213%	34%	-1%	181%
Design	146%	124%	198%	145%	132%	76%
Film, TV, video, etc.	52%	15%	10%	11%	-13%	-43%
IT, software, etc.	43%	41%	47%	114%	29%	118%
Publishing	5%	-24%	-8%	-9%	10%	-38%
Museums etc.	-10%	-21%	86%	14%	-3%	-21%
Music and arts	78%	1%	81%	49%	58%	15%
All Creative Industries	39%	22%	50%	59%	22%	38%
All Economic Sectors	26%	22%	21%	26%	29%	28%

Calculated from data provided in DCMS Sector Economic Estimates 2017: Regional GVA

A similarly complex, or messy, picture is found in the changes in economic output at the sub-sector level by region. While at the aggregated level the Creative Industries have grown steadily, and particularly rapidly in London (Figure 2), when disaggregated every region including London has at least one sub-sector in which the value of economic output (at current prices) has declined, while others have grown substantially, and faster than both their host region as a whole, and the UK's Creative Industries as a whole. There are again few simple patterns. One is the growth of 'Design'. Particularly notable is that this sub-sector has grown fastest in the northern and western regions of the UK. Publishing, by contrast, has contracted in five of the twelve regions, while still growing fastest in London. Notable also is that the 'IT, software and computer services' sub-sector, which is by far the largest, grew considerably faster in London than in the South East, the region for which this industry's GVA based Location Quotient is, unusually among the Creative Industries, higher than in London. Again, explaining these patterns is beyond the scope of this paper. They do however support the suggestion from the changing patterns of employment at the sub-sector/regional level that beneath the aggregate statistics the Creative Industries have experience considerable industrial turbulence and that regional advantages or disadvantages, particularly outside London, may be unstable.

While the growth of employment and economic output and the sub-sector level by region shows considerable, messy, variation, analyses of inequalities reveal much more stable patterns over time. Two different measures of inequality are reported in Table 10: the Regional Inequality Index and the Herfindahl index. The Regional Inequality Index finds the average "X" in a set of Location Quotients where this is X (or X/1) for regions in which the industry is over-represented and 1/X for regions in which the industry is under-represented, both relative to the region's share of all economic activities. For example, if the industry has twice the "expected" presence in those regions in which it is over-represented and half the "expected" presence in those regions in which it is under-represented, then X will be 2.[14] Another interpretation of this index is the amount by which the weaker regions would have to increase their activity in the industry in question to reach their "expected level" of activity in this industry. If X is two then the weaker regions would need to double their share of these activities to catch up.[15] The Regional Inequality Index has been calculated using employment (RII_{Emp}) and Gross Value Added as measures of activity (RII_{GVA}).

The Herfindahl index is a well-known measure of industrial concentration, which is normally applied to firms, but is here applied to regions. It is found by summing the squared shares of each entity's (here region's) share of the total activity of the industry. For this analysis, $a_{i,r}$ is a measure (either employment or Gross Value Added) of industry *i* in region *r*, and $\sum_r \quad a_{i,r}$ is the sum of this industry's activities over all regions. The Herfindahl index for industry *i* is found by squaring these shares and summing them: i.e., $H_i = \sum_r \quad \left(\frac{a_{i,r}}{\sum_r \quad a_{i,r}}\right)^2$. Like the RII, the Herfindahl index is here also calculated using employment (H_{Emp}) and Value Added as measures of activity (H_{GVA}) (Table 10).

[14] The Regional Inequalities Index is calculated by taking the natural log of each region's Location Quotients for the industry in question, converting each of these to an absolute value (i.e., removing the negative signs) and then finding the exponent of each. Each component is then multiplied by the relative economic weight of the region to which it relates. The set of components is then summed, giving the Regional Inequalities Index.

[15] Increasing their share implies either a redistribution of activities or that the weaker regions grow faster than the stronger regions. With no redistribution, If X is 2, then the weaker regions would have to grow their share of the industry four times to catch up.

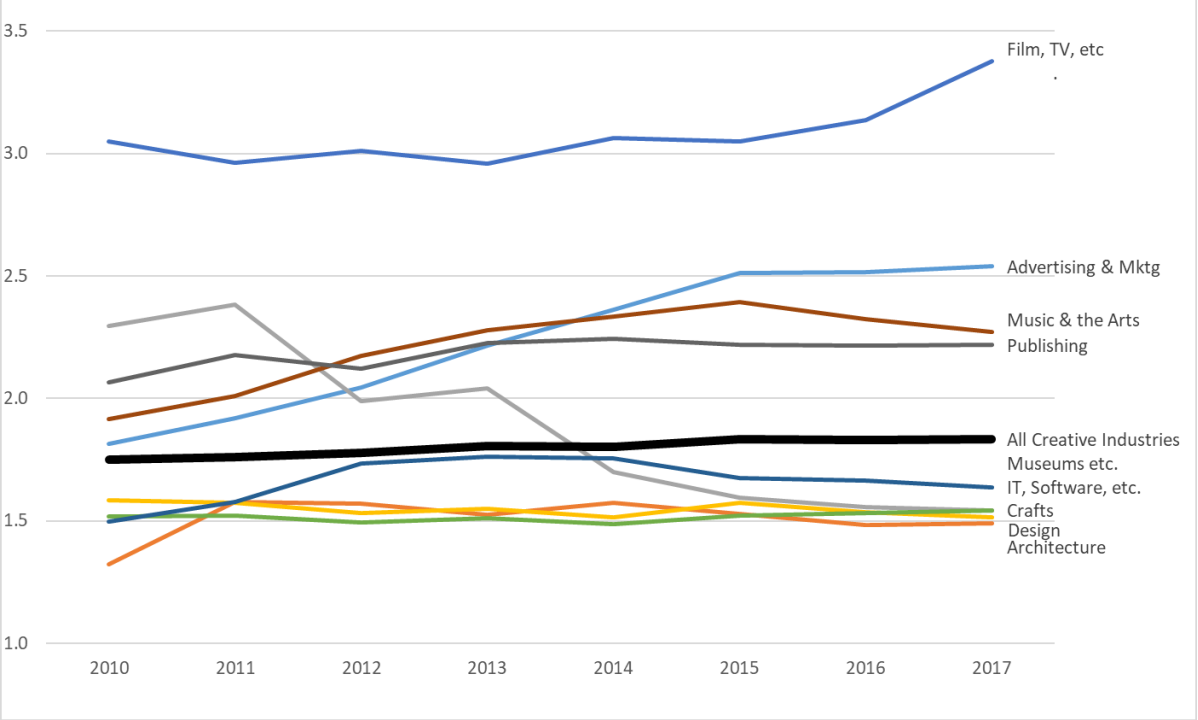
Table 10: Regional Inequality Index and Herfindahl Index by Employment, GVA and over time

		2010	2011	2012	2013	2014	2015	2016	2017	2018
All Creative Industries	RII_{Emp}	n.a.	1.46	1.43	1.41	1.42	1.4	1.41	1.41	1.46
	RII_{GVA}	1.75	1.76	1.78	1.8	1.8	1.83	1.83	1.83	n.a.
	H_{Emp}	n.a.	0.16	0.15	0.16	0.16	0.15	0.16	0.16	0.17
	H_{GVA}	0.26	0.27	0.27	0.28	0.29	0.29	0.3	0.31	n.a.
Advertising & marketing	RII_{Emp}	n.a.	1.86	n.a.	n.a.	n.a.	n.a.	1.87	2.01	1.91
	RII_{GVA}	1.81	1.92	2.05	2.22	2.36	2.51	2.51	2.54	n.a.
	H_{Emp}	n.a.	0.26	n.a.	n.a	n.a.	n.a.	0.28	0.3	0.29
	H_{GVA}	0.29	0.32	0.35	0.39	0.42	0.45	0.46	0.47	n.a.
Architecture	RII_{Emp}	n.a.	1.39	n.a.	n.a.	n.a.	n.a.	n.a.	1.15	1.26
	RII_{GVA}	1.32	1.58	1.57	1.52	1.57	1.53	1.48	1.49	n.a.
	H_{Emp}	n.a.	0.16	n.a.	n.a	n.a.	n.a.	n.a.	0.14	0.16
	H_{GVA}	0.16	0.21	0.20	0.21	0.22	0.24	0.23	0.24	n.a.
Crafts	RII_{GVA}	2.29	2.38	1.99	2.04	1.7	1.59	1.55	1.54	n.a.
	H_{GVA}	0.21	0.22	0.2	0.21	0.19	0.17	0.15	0.15	n.a.
Design and designer fashion	RII_{Emp}	n.a.	1.4	1.37	1.37	1.35	1.3	1.27	1.43	1.41
	RII_{GVA}	1.59	1.57	1.53	1.55	1.52	1.57	1.53	1.51	n.a.
	H_{Emp}	n.a.	0.16	0.14	0.15	0.15	0.13	0.13	0.16	0.15
	H_{GVA}	0.22	0.25	0.23	0.25	0.24	0.24	0.22	0.22	n.a.
Film, TV, video, radio & photography	RII_{Emp}	n.a.	1.62	1.66	1.66	1.68	1.57	1.49	1.6	1.57
	RII_{GVA}	3.05	2.96	3.01	2.96	3.06	3.05	3.14	3.38	n.a.
	H_{Emp}	n.a.	0.2	0.22	0.22	0.22	0.2	0.19	0.22	0.2
	H_{GVA}	0.55	0.54	0.55	0.54	0.55	0.54	0.56	0.6	n.a.
IT, software and computer services	RII_{Emp}	n.a.	1.46	1.45	1.39	1.38	1.42	1.42	1.38	1.48
	RII_{GVA}	1.52	1.52	1.49	1.51	1.49	1.52	1.53	1.54	n.a.
	H_{Emp}	n.a.	0.15	0.14	0.14	0.14	0.14	0.15	0.15	0.16
	H_{GVA}	0.19	0.19	0.19	0.19	0.19	0.19	0.2	0.2	n.a.
Publishing	RII_{Emp}	n.a.	1.41	1.54	1.7	1.57	1.67	1.79	1.66	1.76
	RII_{GVA}	2.07	2.18	2.12	2.23	2.24	2.22	2.22	2.22	n.a.
	H_{Emp}	n.a.	0.16	0.16	0.19	0.19	0.18	0.2	0.19	0.22
	H_{GVA}	0.33	0.34	0.32	0.34	0.36	0.34	0.35	0.37	n.a.
Museums, etc.	RII_{GVA}	1.5	1.58	1.74	1.76	1.75	1.67	1.66	1.64	n.a.
	H_{GVA}	0.21	0.23	0.26	0.27	0.28	0.26	0.26	0.24	n.a.
Music and arts	RII_{Emp}	n.a.	1.6	1.44	1.32	1.47	1.34	1.49	1.35	1.42
	RII_{GVA}	1.92	2.01	2.17	2.28	2.33	2.39	2.32	2.27	n.a.
	H_{Emp}	n.a.	0.18	0.15	0.13	0.16	0.14	0.17	0.14	0.16
	H_{GVA}	0.34	0.36	0.39	0.42	0.43	0.44	0.44	0.43	n.a.
All Sectors	H_{Emp}	n.a.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	H_{GVA}	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	n.a.

Calculated from data provided in DCMS Sector Economic Estimates providing employment by region (2011-2018) and Regional GVA (2010-2017). Due to disclosure rules sub-sector creative industry employment is not available over time for the 'Crafts' or 'Museums, etc.' sub-sectors, nor normally available for Wales and Northern Ireland. The employment RII's and H's reported above are therefore calculated with Wales and Northern Ireland combined (found by deducting England and Scotland from UK totals). Disclosure rules also mean the employment RIIs and H's are not available for some years for 'Advertising and Marketing', and can only be found for 'Architecture' for 2011, 2017 and 2018 by combining the three Northern English regions.

H-index cells are shaded. Green indicates an H-index score below 0.15 (unconcentrated), yellow a score of 0.15 to 0.249 (moderately concentrated), red a score of 0.25 to 0.49 (highly concentrated) and dark red a score of 0.5 or above (very highly concentrated).

Figure 3: Regional Inequality Index scores in Gross Value Added by sub-sector and over time



Conventionally, an H index value below 0.15 indicates an un-concentrated industry;[16] an H value between 0.15 and 0.25 indicates a moderately concentrated industry, while an H value above 0.25 indicates a highly concentrated industry. The cells in Table 10 with these values have been coloured green, yellow and red respectively, with a darker red used for H values greater than 0.5.

Several things are notable from these analysis.

- First, the Creative Industries as a whole show persistent (regional) inequality.
- This inequality is moderate in relation to employment, but still higher than inequality in the regional distribution of all economic activities, while inequality in (regional) Gross Value Added is high and has, in recent years, increased further. Certainly there is no sign that regional inequalities, measured either by employment or Gross Value Added, have diminished since 2010/11.
- The individual sub-sectors show different extents of inequality. Interestingly, and importantly, inequality in the regional distribution of economic output is always greater than that in employment.
- Regional inequality is greatest in the 'Film, TV, etc.' sub-sector, and is very large when measured by value added. Moreover, the regional inequality in the economic output of this sub-sector is growing (see Figure 3), whereas the regional inequality in its distribution of employment is moderate and stable. This suggests that within this sub-

[16] The lower bound of the index is determined by the number of entities in the analysis. In the present case this is 12 regions, so if activities were equally divided across these twelve regions the H would be 1/12, 0.083. On the other hand, if all activity were concentrated in one regions, the H would be one.

sector value generating and capturing activities are regionally concentrated (overwhelmingly in London) to a much greater degree than is employment in this sub-sector. Similar, if less extreme patterns arise for the 'Publishing' and 'Music and the arts'.

- The 'Advertising and marketing' sub-sector displays a slightly different pattern. Economic output is similarly concentrated in London (and has been becoming more so), but in contrast to the sub-sectors discussed above employment in this sub-sector is also highly concentrated (again in London), albeit still not as concentrated as is this sub-sector's economic output.
- The 'IT, software and computer services', 'Architecture' and 'Design' sectors reveal a third pattern. Economic output in these sub-sectors is moderately concentrated regionally (the H index ranges from 0.16 to 0.25) and the extent of concentration is either holding steady or increasing slowly, while inequality in employment is lower, typically around H = 0.15. These sub-sectors are more evenly distributed regionally by both economic output and employment than are the three aforementioned sub-sectors.
- The two remaining sub-sectors are 'Crafts' and 'Museums, galleries and libraries'. Economically, these are small, and regional economic output data is available over time, but employment data is not. 'Museums, etc.' shows an increasing then diminishing regional concentration of activity over time, while the 'Crafts' sub-sector, which is much the smallest of the nine, is the only sub-sector in which economic output has become more evenly distributed (regionally) over time (See Figure 3).

5. Labour Productivity, and Productivity Growth

> *"Productivity isn't everything, but, in the long run, it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker."* Paul Krugman

Labour productivity is output per worker, or output per hour worked, the latter being most economists' preferred measure of labour productivity. Output per person employed nonetheless provides an indication of labour productivity, and how this varies among industries and regions.

I stress here that the analysis that follows is not based on official statistics of productivity, which the DCMS does not publish, but rather on dividing the official figures for regional economic output (Gross Value Added) by the official figures for employment for each industry-region cell for which data is available. As these are not official calculations, the results should be considered with some caution.[17]

Table 11 shows that the DCMS output and employment statistics imply that Creative Industries located in London were marginally less productive than all (non-financial) activities undertaken in London, while outside of London the Creative Industries are considerably less productive than the various regional economies in which they are active. This also applies to the South East, which is the only region aside from London in which the Creative Industries are more productive than in the UK as a whole.

The DCMS output and employment estimates also suggest that labour productivity varies widely by sub-sector within regions. In London, for example, the 'Film, etc.' sub-sector generated £117,100 per person employed, while the 'Design' sub-sector achieved only about

[17] The DCMS uses the annual population survey (APS) to derive employment by creative industry sub-sector. As this is a self-reported survey of individuals, it can be inconsistent with the allocation of businesses by industry and location in the National Accounts. This inconsistency is greater when the data is more disaggregated, for example to region-sub-sector "cells". For this reason the DCMS urges caution in inferring labour productivity by dividing economic output derived from the National Accounts by employment derived from the APS.

a quarter of this. Why this is the case is beyond the scope of this paper. Possibly there is a lot of part-time working in 'Design', so output per hour worked may be higher; nonetheless the published DCMS estimates imply that labour productivity in the design sector – including in London - is surprisingly low.

Table 12 shows the implied output per person employed in each region where the UK average for each particular sub-sector (plus the Creative Industries as a whole, and the UK economy as a whole) have been indexed to 100. This makes it easier to recognise implied regional productivity differences within particular industries. Also reported is the ONS's estimate of output per hour worked for all activities in each region. This tracks output per person employed fairly closely at the regional level, although note that a difference for London suggest that people employed in London tend to work longer hours.

Table 11: GVA per person employed by Creative Industry Sub-Sector and Region, 2017

GVA per person employed relative to the Creative Industries UK average, £50.6k

≥101.1 [≥2x]	<101.1 to 75.8 [<2x to 1.5x]	<75.8 to 50.6 [<1.5x to 1x]	<50.6 to 33.7 [<1x to .75x]	<33.7 to 25.3 [<.75x to .5x]	<25.3 [<.5x]

	London	South East	East of England	South West	West Midlands	East Midlands
Advertising & mkt'ing	89.5	58.5	47.5	52.3	62.3	31.3
Architecture	78.0	42.5	23.2	33.3	17.1	19.6
Crafts	n.a	n.a	n.a	n.a.	n.a	n.a
Design	29.5	38.0	23.8	13.6	12.4	17.0
Film, TV, video, etc.	117.1	30.4	33.8	29.2	15.3	14.1
IT, software, etc.	69.1	79.3	60.4	33.2	47.9	32.8
Publishing	97.5	57.9	43.1	35.2	39.9	23.2
Museums etc.	28.6	7.9	5.8	n.a.	n.a.	n.a.
Music and arts	77.7	23.9	20.0	8.2	22.2	17.1
All Creative Industries	79.7	55.4	41.5	26.3	33.7	24.3
All Economic Sectors	81.1	60.9	54.3	45.9	49.4	47.8

	North West	Yorkshire & Humber	North East	Scotland	Wales	Northern Ireland
Advertising & mkt'ing	61.5	31.4	n.a	47.5	n.a	n.a
Architecture	n.a	n.a	n.a	27.8	n.a	n.a
Crafts	n.a	n.a	n.a	n.a.	n.a	n.a
Design	30.4	20.9	n.a	18.4	n.a	n.a
Film, TV, video, etc.	36.3	16.1	n.a	26.9	n.a	n.a
IT, software, etc.	50.2	38.8	n.a	45.2	n.a	n.a
Publishing	37.7	44.7	n.a	30.1	n.a	n.a
Museums etc.	10.3	10.9	n.a	19.9	n.a	n.a
Music and arts	22.2	11.3	n.a	14.6	n.a	n.a
All Creative Industries	39.5	26.5	22.3	31.6	17.9	43.0
All Economic Sectors	50.4	45.0	45.6	52.0	44.6	48.9

Calculated from data provided in DCMS Sector Economic Estimates 2017: Regional GVA and Employment

In all the sub-sectors, output per person employed is higher in London than the national average. In 'Architecture' and 'Music and the arts' output per person employed in London is more than double the national average, while 'Film, etc.' is not far behind. There are only six other sub-sector region cells in which output per person employed is above the national average for the sub-sector in question. Three of these are in the South East ('Architecture', 'Design' and 'IT, software, etc.'), and one each in the East of England ('IT, software, etc.'), the North West ('Design') and Scotland ('Museums, etc.'). Meanwhile there are 15 sub-sector region cells (for which data is available) in which the region's output per person employed is less than half the UK's average for the sub-sector. This includes 'Film, etc.' in six regions, the most productive region outside of London for which is the North West of England, which achieves just 57% of the national average output per employee.

Explaining these implied differences in productivity is beyond the scope of this paper, and will require further research.[18] At least two things need to be explained. First, why does productivity apparently differ so much between London and the other regions? And why does the regional pattern of relative productivity differ so substantially between sub-sectors (e.g., between the 'Film, etc.' sub-sector and the 'IT, software, etc.' sub-sector).

Table 12: GVA per person employed relative to Industry Averages, 2017

GVA per person employed relative to each industry's average, indexed to 100

≥200	<200 to 150	<150 to 100	<100 to 67	<67 to >50	≤50

	London	South East	East of England	South West	West Midlands	East Midlands
Advertising & mkt'ing	128	84	68	75	89	45
Architecture	207	113	62	88	46	52
Crafts	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Design	119	154	96	55	50	69
Film, TV, video, etc.	183	48	53	46	24	22
IT, software, etc.	121	139	106	58	84	57
Publishing	159	94	70	57	65	38
Museums etc.	189	52	39	n.a.	n.a.	n.a.
Music and arts	230	71	59	24	66	51
All Creative Industries	157.6	109.6	82.1	52.0	66.6	48.1
All: GVA / employed	145.2	108.9	97.2	82.1	88.5	85.5
All: GVA / hour worked*	133.0	108.2	93.4	89.5	88.1	84.8

	North West	Yorkshire & Humber	North East	Scotland	Wales	Northern Ireland
Advertising & mkt'ing	88	45	n.a.	68	n.a.	n.a.
Architecture	n.a.	n.a.	n.a.	74	n.a.	n.a.
Crafts	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Design	123	85	n.a.	75	n.a.	n.a.
Film, TV, video, etc.	57	25	n.a.	42	n.a.	n.a.
IT, software, etc.	88	68	n.a.	79	n.a.	n.a.
Publishing	61	73	n.a.	49	n.a.	n.a.
Museums etc.	68	72	n.a.	132	n.a.	n.a.
Music and arts	66	33	n.a.	43	n.a.	n.a.
All Creative Industries	78.2	52.4	44.0	62.5	35.3	85.0
All: GVA / employed	90.1	80.5	81.6	93.1	79.8	87.5
All: GVA / hour worked*	92.2	85.2	89.2	97.5	84.2	83.5

Calculated from data provided in DCMS Sector Economic Estimates 2017: Regional GVA and Employment

* Source: ONS: Regional and sub-regional productivity in the UK, February 2019[19]

[18] Previous studies examining productivity in the Creative Industries include Brighton et al. (2016) and Maggs and Hathaway (2016)

[19] Available here: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/articles/regionalandsubregionalproductivityintheuk/february2019#results-for-nuts1-regions-and-countries

Agglomeration economies are likely to provide a partial answer to the first question. Firms located in close proximity to each other and therefore in high agglomerations with rival firms tend to need to be stronger and more productive to survive, in part due to greater competition. They may also become more specialised. Both competition and specialisation are associated with greater output per worker. Furthermore, the greatest agglomeration is in London, where the costs of doing business are higher, due to higher salaries, office rents, etc. This also means that, other things being equal, firms need to be more productive to survive in London than elsewhere.

Answering the second question probably requires recognition that the activities of firms within these sub-sectors are heterogeneous, and different types of firms tend to locate in different places. In particular, London may be the region in which firms that are particularly adept at capturing value tend to locate. Achieving high value added is ultimately related to capturing value, rather than necessarily creating value.

Table 13 shows the mean annual rate of growth of (implied) economic output per person employed in each industry-region cell for which data is available. This presents are complex and highly uneven distribution. On the one hand (implied) economic output per person employed has grown at more than twice the rate of the Creative Industries in the UK as a whole (1.8% per annum) in 21 sub-sector region cells, plus for the Creative Industries as a whole in Scotland and Northern Ireland. On the other, (implied) output per person employed has declined in 23 sub-sector region cells, and also for the Creative Industries as a whole in Yorkshire and the Humber, the North East and Wales.

As these are unofficial calculations, it is perhaps best not to read too much into them, although these findings do suggest that the performance of the Creative Industries is rather volatile.

Table 13: Mean annual change in GVA per person employed by Industry & Region, 2011-2017

Change in GVA per person employed relative to the Creative Industries UK average, 1.8% per annum

≥3.6% [≥2x]		<3.6% to 2.7% [<2x to 1.5x]	<2.7% to 1.8% [<1.5x to 1x]	<1.8% to 0.9% [<1x to .5x]	<0.9% to 0% [<5x to 0%]	<0%

	London	South East	East of England	South West	West Midlands	East Midlands
Advertising & mkt'ing	9.7%	3.9%	8.0%	6.9%	5.8%	-5.1%
Architecture	11.9%	4.2%	1.9%	-5.6%	4.5%	3.5%
Crafts	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Design	-1.7%	11.8%	-1.1%	-3.6%	-4.7%	0.6%
Film, TV, video, etc.	0.3%	1.4%	8.3%	1.2%	-10.0%	-10.7%
IT, software, etc.	0.0%	1.2%	0.4%	-2.1%	-2.5%	-5.7%
Publishing	3.5%	-1.7%	2.6%	6.5%	13.7%	2.1%
Museums etc.	6.1%	-11.7%	-19.2%	n.a.	n.a.	n.a.
Music and arts	8.2%	0.9%	3.4%	-12.1%	2.6%	-6.4%
All Creative Industries	3.2%	0.9%	2.5%	-1.2%	-0.4%	-2.5%
All Economic Sectors	1.8%	2.6%	3.2%	1.9%	2.7%	2.7%

	North West	Yorkshire & Humber	North East	Scotland	Wales	Northern Ireland
Advertising & mkt'ing	0.9%	-4.7%	n.a.	4.9%	n.a.	n.a.
Architecture	n.a.	n.a.	n.a.	2.6%	n.a.	n.a.
Crafts	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Design	16.4%	3.1%	n.a.	7.6%	n.a.	n.a.
Film, TV, video, etc.	1.8%	-7.1%	n.a.	-1.4%	n.a.	n.a.
IT, software, etc.	2.0%	-3.2%	n.a.	2.8%	n.a.	n.a.
Publishing	4.4%	4.5%	n.a.	11.2%	n.a.	n.a.
Museums etc.	3.0%	0.5%	n.a.	8.0%	n.a.	n.a.
Music and arts	0.7%	-4.4%	n.a.	-5.2%	n.a.	n.a.
All Creative Industries	2.1%	-2.1%	-3.9%	3.6%	-3.6%	6.9%
All Economic Sectors	2.8%	1.5%	2.0%	2.7%	2.6%	3.4%

Calculated from data provided in DCMS Sector Economic Estimates 2011 & 2017: Regional GVA & Employment

Table 14 presents a simplified analysis, dividing the UK between London and the South East, where the Creative Industries are disproportionately located, and the Rest of the UK where they are relatively under-represented.

Across the Creative Industries as a whole, (implied) output per person employed has grown much more rapidly (at 2.7% per annum between 2011 and 2017) in London and the South East than in the rest of the UK (0.4%), and among the eight sub-sectors for which data is available the growth rate in London and the South East exceeds that in the rest of the UK in all except 'Museums, etc.'. Furthermore, while none of the eight sub-sectors show declining productivity

in London and the South East, four of the eight show declining productivity in the rest of the UK.

Table 14: Mean change in GVA per person employed in London the South East and Rest of the UK

	London & South East	Rest of UK	All of the UK
Advertising & marketing	8.9%	2.8%	7.4%
Architecture	9.5%	-0.7%	3.6%
Crafts	n.a.	n.a.	-0.5%
Design	1.7%	1.3%	1.6%
Film, TV, video, etc.	0.9%	-2.8%	0.2%
IT, software, etc.	0.4%	-0.9%	-0.2%
Publishing	2.1%	6.3%	4.4%
Museums etc.	0.0%	3.4%	2.2%
Music and arts	7.0%	-2.7%	2.4%
All Creative Industries	2.7%	0.4%	1.8%
All Sectors	2.3%	2.2%	2.3%

6. Conclusions: Findings, Research Questions and Policy Challenges

6.1 Findings

The analysis presented in this paper shows that, collectively, the UK's Creative Industries are growing rapidly, both in terms of employment and economic output. They also make a valuable contribution to the UK's balance of trade.

However, when decomposed the various sub-sectors show very different patterns of growth, with some even contracting in terms of employment.

Moreover, as the Industrial Strategy acknowledges, the Creative Industries are very unevenly distributed across the UK, relative to economic activities in the UK as a whole. And this unevenness is considerably more pronounced in terms of the value of economic outputs than it is for employment, with London and the South East dominating the former much more than the latter.

This implies substantial inter-regional differences in labour productivity within the Creative Industries. Indeed, the implied labour productivity of some of the Creative Industry sub-sectors in the northern and western regions of the UK is strikingly low. The lack of official statistics on productivity makes these findings necessarily tentative, and the DCMS is urged to address this issue of measuring productivity in its Sector Economic Estimates.

6.2 Research Questions

The analysis in this paper raises research questions that require addressing, including:

- Why are there such big differences in the geographical distribution of economic output and employment? In particular, why it is that London and the South East dominate the former to a much greater extent than they dominate the latter. Are the differences 'real' or are they a statistical artefact. If they are real, then this implies there are very substantial differences in labour productivity not only between regions but also across the sub-sectors within the Creative Industries. These differences need to be better understood.
- Why is the pattern of growth at the sub-sector level so messy and inconsistent? What does this tell us about the robustness of regional advantages or disadvantages?

6.3 Policy Challenges

The UK government and devolved authorities rightly recognise the economic and socio-cultural significance of the Creative Industries, and moreover that they can be expected to continue growing into the future at a faster rate than the economy as a whole. Indeed, the Bazalgette 'Independent review of the Creative Industries' confidently states that: "Looking forward fifteen or twenty years to what our future economy could be like, in every scenario the Creative Industries are of central importance to the UK's productivity and global success. We have two great assets: the English language and our national capacity for creativity" (Bazalgette, 2017, p. 4).

Any dynamic economy requires growth sectors in part to compensate for the contraction of declining sectors. However, as we have seen, the Creative Industries are very unevenly distributed across the UK, which is one of the most regionally unbalanced countries in the industrialized world (McCann, 2019).

As the government is committed to 'narrowing the gap' between the London and the South East, both in relation to the Creative Industries and the economy as a whole, the policy challenge can be summarised as how to maintain growth in London and the South East while ensuring the rest of the country catches up. This implies that the Creative Industries need to grow faster in the rest of the UK than in London and the South East and, to be meaningful, 'catching up' here means not only narrowing the gap in terms of employment, but also in terms of productivity.

This is a major challenge.

As a share of total employment, the Creative Industries have been growing fastest in London, such that between 2011 and 2018 they increased their share of total employment by, on average, 0.255 of a percentage point each year. In the rest of the UK, excluding London and the South East, the Creative Industries share of employment increased by just under 0.1 of a percentage point each year. If we extrapolate these trends into the future, then in twenty years' time the Creative Industries would account for just over 18% of all employment in London, and 14.4% of all employment in London and the South East, but just 6.4% of all employment in the Rest of the UK (Table 15a).

For the rest of the UK to catch up to this 14.4% of total employment in the Creative Industries, this would require the C.I.'s in these regions to grow their share of employment by half a percentage point every year for the next twenty years, **which is roughly five times their present rate of growth**, and twice the rate of growth achieved by London in the 2011-2018 period (Table 15b).

Table 15a: Extrapolating the Creative Industries share of Employment on Current Trends[20]

	C.I.'s share of employment in 2018	Average percentage point growth per year, 2011-18	Projected shares at current trend			
			5 years (2023)	10 years (2028)	20 years (2038)	30 years (2048)
London	13.0%	0.255	14.2%	15.5%	18.1%	20.6%
London & SE	10.3%	0.207	11.3%	12.3%	14.4%	16.5%
Rest of UK	4.4%	0.099	4.9%	5.4%	6.4%	7.4%
All of UK	6.2%	0.138	6.8%	7.5%	8.9%	10.3%

Table 15b: Growth Rate Required for the Rest of the UK to Catch up by Catch Up period

Catch up period	Target share of total employment	Required Growth Rate: Percentage point per annum	Trend Growth Rate: Percentage point per annum	Required GR relative to Trend GR
5 years	11.3% in 2023	1.4	0.1	13.8
10 years	12.3% in 2028	0.8	0.1	8.0
20 years	14.4% in 2038	0.5	0.1	5.0
30 years	16.5% in 2048	0.4	0.1	4.1

Meanwhile, as we have seen official statistics imply that the Creative Industries in London generate almost £80,000 per person employed in economic output, while London and the South East combined achieve about £72,000 in value added per person employed. The rest of the UK achieves less than half of this (£30,900). The DCMS's statistics also suggest that economic output per person employed has been growing much more rapidly in London and the South East than in the Rest of the UK. The implied productivity gap has been widening, not narrowing. **For convergence to occur, productivity growth in the rest of the UK has to be higher than that in London and the South East**.

The gap is also large. Using the available data, implied output per head is 80% higher in the South East (excluding London) than in the rest of the UK (also excluding London), and 150% higher in London. **Labour productivity would have to grow by about 3 percentage points more in the rest of the UK <u>for twenty years</u> for these regions to catch up with productivity in the South East, let alone London**.

Narrowing the gap is not impossible, but it is important that policy makers recognise that growing the Creative Industries outside of London and the South East is a major, long term challenge, and that relatively small, short-term initiatives will prove inadequate. While this is not the place to engage in a discussion of Creative Industries policy, I question whether the current emphasis on 'clusters' is up to the task, particularly as the largest, strongest, and fastest growing clusters are predominantly in London, while clusters in the regions outside London (and the South East) tend to be much smaller. To be clear, I am not opposed to the current clusters based policy; my concern is whether this will be sufficient to start narrowing the gap between the Creative Industries presence in London (and the South East) and in the rest of the UK.

[20] These calculations are based on linear progressions. An alternative approach is to use geometric progressions, but there is little difference in the outcome over the short to medium term.

References

Bakhshi, H., Freeman, A., and Higgs, P. (2013) 'A dynamic mapping of the UK's creative industries', NESTA, London.[21]

Bazalgette, Peter (2017) *Independent Review of the Creative Industries, HM Government*, London.[22]

Brighton, R., Gibbon, C., Brown, S. and Luanaigh, A.N. (2016) 'Understanding the future of productivity in the creative industries: Strategic Labour Market Intelligence Report' SQW and the UK Commission for Employment and Skills.[23]

Brown, Jennifer and Rhodes, Chris (2018), House of Commons Library Briefing Paper #00611, 15 May 2018: The motor industry statistics and policy

CEBR (2019) Contribution of the arts and culture industry to the UK economy, Report for Arts Council England, Centre for Economic and Business Research, London[24]

Chapain, C., Cooke, P., de Propris, L., MacNeill, S. and Mateos-Garcia, J. (2010) Creative Clusters and Innovation: Putting creativity on the map, London: Nesta.

DCMS (2001) 'Creative Industries Mapping Documents 2001', Department for Digital, Culture, Media and Sport, London,[25]

HM Government (2018) 'Industrial Strategy, Creative Industries Sector Deal', HM Government, London.[26]

Maggs and Hathaway (2016) 'Absorptive Capacity: Boosting productivity in the Creative Industries', Frontier Economics, London.[27]

Mateos Garcia, J., Klinger, J, and Stathoulopoulos, K. (2018) Creative Nation: How the creative industries are powering the UK's nations and regions, Nesta, London.[28]

Mateos-Garcia, J. and Bakhsh, H. (2016) The Geography of Creativity in the UK – Creative clusters, creative people and creative networks', Nesta and Creative England.[29]

McCann, P. (2019 / forthcoming) 'Perceptions of regional inequality and the geography of discontent: insights from the UK', Regional Studies – accessed through early access, 29th August, 2019.

[21] Available here: https://media.nesta.org.uk/documents/a_dynamic_mapping_of_the_creative_industries.pdf
[22] Available here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/649980/Independent_Review_of_the_Creative_Industries.pdf
[23] Available here http://www.sqw.co.uk/files/7814/7324/3296/SQW_2016_Creativity_sector_productivity_report-07.09.16.pdf
[24] Available here: https://www.artscouncil.org.uk/sites/default/files/download-file/Economic%20impact%20of%20arts%20and%20culture%20on%20the%20national%20economy%20FINAL_0_0.PDF
[25] Available here: https://www.gov.uk/government/publications/creative-industries-mapping-documents-2001
[26] Available here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/695097/creative-industries-sector-deal-print.pdf
[27] Available here: https://www.frontier-economics.com/media/2447/boosting-productivity-in-the-creative-industries.pdf
[28] Available here: https://media.nesta.org.uk/documents/creative_nation-2018.pdf
[29] Available here: https://media.nesta.org.uk/documents/the_geography_of_creativity_in_the_uk.pdf

Appendix Table 1: The "Creative Industries", and their aggregation into sub-sectors

As well as identifying the Creative Industries, the Department for Culture Media and Sport (DCMS) also defines other sectors for which it has responsibility, including the Digital Sector, the Cultural sector, Telecoms, Gambling, Sport, Tourism and Civil Society. Collectively these are identified as the DCMS Sectors. These sectors are not mutually exclusive (indeed Telecoms is a sub-component of the Digital Sector). The Creative Industries, the Cultural Sector and the Digital Sector all partially overlap.

SIC 2007 – Code and Description	Creative Industries	Digital Sector	Cultural Sector	Creative Industries Sub-sector
70.21 – Public relations and communication activity	✔	×	×	1 – Advertising & marketing
73.11 – Advertising agencies	✔	×	×	
73.12 – Media representation	✔	×	×	
71.11 – Architecture activities	✔	×	×	2 – Architecture
32.12 – Manufacture of jewellery & related articles	✔	×	✔	3 – Crafts
74.1 – Specialist design activities	✔	×	×	4 – Design
59.11 – Film, video and TV programme production	✔	✔	✔	5 – Film, TV, video, radio & photography
59.12 – Film, video and TV post-production activities	✔	✔	✔	
59.13 – Film, video and TV programme distribution	✔	✔	✔	
59.14 – Film / motion picture projection activities	✔	✔	✔	
60.1 – Radio broadcasting	✔	✔	✔	
60.2 – Television programming and broadcasting	✔	✔	✔	
74.2 – Photographic activities	✔	×	✔	
58.21 – Publishing of computer games	✔	✔	×	6 – IT, software & computer services
58.29 – Other software publishing	✔	✔	×	
62.01 – Computer programming activities	✔	✔	×	
62.02 – Computer consultancy activities	✔	✔	×	
58.11 – Book publishing	✔	✔	×	7 – Publishing
58.12 – Publishing of directories and mailing lists	✔	✔	×	
58.13 – Publishing of newspapers	✔	✔	×	
58.14 – Publishing of journals and periodicals	✔	✔	×	
58.19 – Other publishing activities	✔	✔	×	
74.3 – Translation and interpretation activities	✔	×	×	
91.01 – Library and archive activities	✔	×	✔	8 – Museums, galleries, libraries
91.02 – Museum activities	✔	×	✔	
59.2 – Sound recording and music publishing	✔	✔	✔	9 – Music, performing and visual arts
85.52 – Cultural education	✔	×	✔	
90.01 – Performing arts	✔	×	✔	
90.02 – Support activities to performing arts	✔	×	✔	
90.03 – Artistic creation	✔	×	✔	
90.04 – Operation of arts facilities	✔	×	✔	

Appendix Table2: Creative Industries and sub-sectors Regional Gross Value Added, 2017, £m

	London	South East	East of England	South West	West Midlands	East Midlands
Advertising & mkt'ing	8,913	1,231	549	485	351	174
Architecture	1,730	508	173	273	162	140
Crafts	67	50	48	19	57	10
Design	1,591	726	245	215	143	176
Film, TV, video, etc.	12,875	864	414	399	192	146
IT, software, etc.	13,494	10,515	3,393	1,907	2,131	1,375
Publishing	6,776	1,942	757	531	235	198
Museums etc.	661	147	49	78	119	30
Music and arts	6,119	930	439	274	343	202
All Creative Industries	52,225	16,913	6,067	4,182	3,733	2,452
All Economic Sectors	435,943	270,075	154,497	132,084	134,590	105,394

	North West	Yorkshire & Humber	North East	Scotland	Wales	Northern Ireland
Advertising & mkt'ing	799	298	78	300	60	74
Architecture	273	126	77	276	81	78
Crafts	11	11	2	16	4	4
Design	246	201	56	149	147	51
Film, TV, video, etc.	659	254	75	493	273	85
IT, software, etc.	2,911	1,374	528	2,007	305	647
Publishing	389	377	90	310	84	66
Museums etc.	75	82	26	133	30	22
Music and arts	468	154	95	333	133	62
All Creative Industries	5,832	2,877	1,025	4,015	1,117	1,088
All Economic Sectors	175,538	118,068	53,825	139,783	62,877	40,048

Source: DCMS Sector Economic Estimates 2017: Regional GVA Sub-sectors (Published 13-2-2019)[30]

[30] Available here - https://www.gov.uk/government/statistics/dcms-sectors-economic-estimates-2017-regional-gva (Accessed 2-5-2019)

Acknowledgements

I would like to thank Hasan Bakhshi and Ziga Dernac for comments on a previous version of this paper. I would like to thank the AHRC for supporting this PEC and therefore this work. Furthermore, I would also like to thank the DCMS for making available the economic estimates on employment and value added that have enabled me to undertake the analysis in this paper. I am responsible for the interpretation of the findings and the views expressed.

Disclaimer

This is a Discussion Paper published by the Creative Industries' Policy and Evidence Centre (hereafter the PEC). All PEC Discussion Papers have been peer reviewed prior to publication. In keeping with normal academic practice, responsibility for the views expressed in this paper, and the interpretation of any evidence presented, lies with the authors. These views and interpretations may not be shared by others, including the Director of the PEC or the editor of the Discussion Paper series. Readers who wish to challenge the evidence and/or interpretations provided are encouraged to do so by contacting the lead author directly and/or by writing to the PEC's Discussion Paper Editor and Research Director at Bruce.Tether@manchester.ac.uk.

PEC Consortium

The PEC is led by innovation foundation Nesta and involves a consortium of UK-wide universities, comprising Birmingham; Cardiff; Edinburgh; Glasgow; Work Foundation at Lancaster University; LSE; Manchester; Newcastle; Sussex, and Ulster. The PEC's Director and Principal Investigator is Hasan Bakhshi, who is also Executive Director, Creative Economy and Data Analytics at Nesta.

For more details visit http://www.pec.ac.uk and @CreativePEC