

12 facts about the UK's international trade in creative goods and services

Salvatore Di Novo, Giorgio Fazio, Wessel N. Vermeulen

Newcastle University Business School

March 2020

Summary

We assess the international trade and performance of the UK's Creative Industries (CIs) by describing 12 facts.

1. The fast rise in CIs' trade is driven by the expansion of trade in services.
2. The rise in creative services trade is seen across sub-sectors.
3. The Information and Communication Technology (ICT) related sector is the most important in the CIs in terms of the volume of exports.
4. Sub-sectors with relatively fewer firms are also the ones with a greater share of international firms.
5. The EU is the largest trading partner for UK creative goods and services, followed by North American Free Trade Agreement (NAFTA) countries and then Asia.
6. The UK's CIs enjoy a large trade surplus in services and a moderate deficit in goods with the EU/European Economic Area (EEA)/Switzerland and a trade surplus with the rest of the world.
7. The main trade partner varies by sub-sector.
8. Trade-intensive CIs are characterised by strong intra-industry trade.
9. 90 per cent of the value of exports from the CIs is created domestically.
10. Domestic and international talent and skills are both important for the CIs.
11. Average (heads-based) labour productivity greatly varies across CIs sub-sectors, partly reflecting differences in human capital.
12. Creative services trade are subject to various degrees of regulation across the world. The restrictiveness of these regulations varies greatly across sub-sector and geography.

Creative Industries Policy & Evidence Centre

Led by **nesta**

Contents

1	Introduction	3
2	Trends in international trade in creative goods and services	4
	2.1 Overall trends	4
	2.2 Sub-sectoral trends	6
	2.3 Sub-sectoral trade participation (intensive margin)	7
	2.4 Sub-sectoral trade participation at the extensive margin of trade	9
3	Directions of trade	11
	3.1 Aggregate flows	11
	3.2 Sub-sectoral directions of trade	13
4	Intra-industry trade and global value chains	17
	4.1 Intra-industry trade	17
	4.2 Trade in value added	19
5	Sub-sectoral characteristics	21
	5.1 Employment	21
	5.2 Gross value added per worker	25
6	Services trade restrictions and UK creative services trade	26
	6.1 Restrictions related to creative vs. non-creative services trade	27
	6.2 Services trade restrictions across the globe	29
7	Summary and conclusions	30
	References	33
	Appendix: Additional tables and figures	34
	Endnotes	39

1

Introduction

According to [United Nations Conference on Trade and Development \(UNCTAD\) \(2018\)](#), worldwide exports of creative goods exceeded US \$500 billion in 2015, with a 150 per cent increase since 2002. Similarly, exports of creative services for the advanced economies are estimated at around \$600 billion in 2015.¹ For the UK, the official data portrays the Creative Industries (CIs, henceforth) as one of the most dynamic parts of the economy with more than £111 billion in Gross Value Added (GVA) in 2018, 5.8 per cent of UK GVA as a whole (up from 4.8 per cent in 2010). These numbers are best understood in reference to other sectors traditionally considered important to the UK economy.

For example, the financial and insurance sector accounted, in the same year, for 7.1 per cent of UK GVA (down from 8.3 per cent of 2010).² The CIs have also become major employers in the UK with more than two million people employed in 2018, a 30 per cent increase from 2011, compared with an overall UK employment increase of 10 per cent over the same period. For further details on GVA and employment figures, see [DCMS \(2020\)](#) and [DCMS \(2019c\)](#), respectively.

With respect to international trade, the main concern of this paper, the official data shows an increasingly international sector in terms of the intensity of incoming and outgoing flows: as of 2017, exports of creative goods and services accounted for nearly 45 per cent and imports accounted for 26 per cent of the CIs' GVA, meaning that the UK's CIs make a strong positive net contribution to the UK's balance of payments.³

Understanding the forces behind these impressive numbers is clearly important. In this paper, we draw on official Department for Digital, Culture, Media and Sport (DCMS) data and from data supplied by other international sources to present facts about the international trade position of the UK's CIs.⁴ In doing so, the paper helps identify issues that need further empirical work.

The rest of the paper is organised as follows. [Section 2](#) looks at the sectoral and sub-sectoral trade trends and trade exposure in terms of trade flows (intensive margin of trade) and share of international firms (extensive margin of trade). [Section 3](#) looks at the sectoral and sub-sectoral directions of trade. [Section 4](#) looks at the extent of intra-industry trade between the sub-sectors that make up the CIs and presents data on the contribution of the UK to the creation of global value in the CIs. In order to assess some of the possible sources of the CIs' international performance, in [Section 5](#) we look at some of the characteristics of the CIs sub-sectors and, in particular, their employment characteristics (composition in terms of human capital, full vs part-time employment and national vs international origin) and Gross Value Added per worker. Given the prominence of trade in services, [Section 6](#) concentrates on the trade environment for services and, in particular, at measures of trade restrictiveness. [Section 7](#), summarises and concludes.

2

Trends in international trade in creative goods and services

2.1 Overall trends

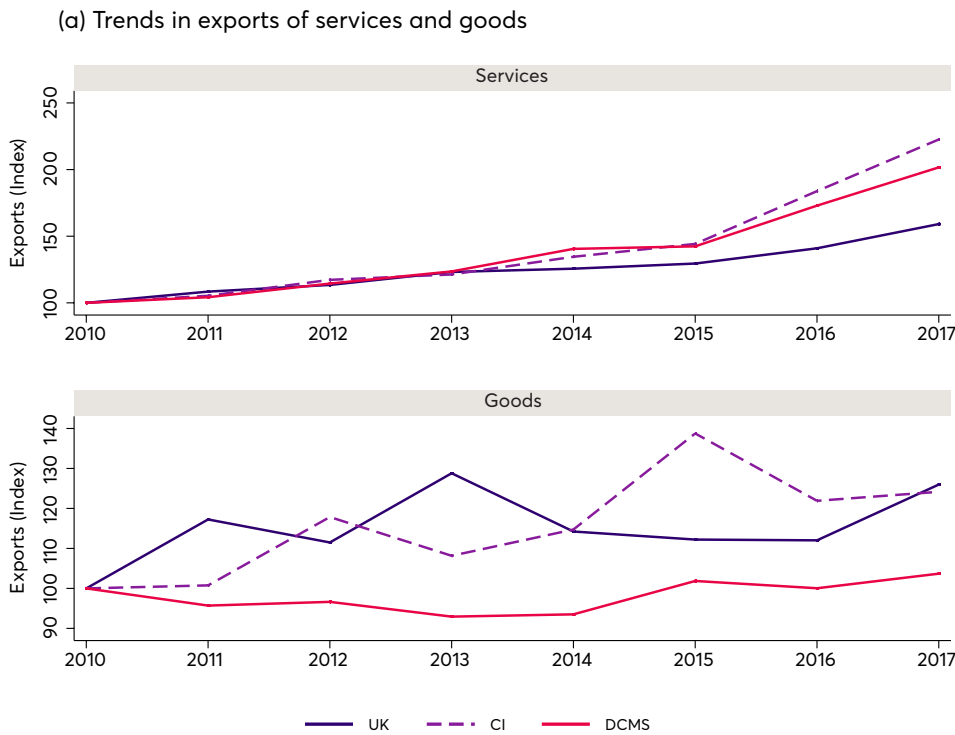
The rising importance of creative exports is best understood relative to the rest of the economy. [Figure 1](#) separately compares exports of goods and services in the CIs with those of DCMS sectors and the rest of the UK economy over the 2010-2017 period.⁵ Overall, the sub-figures show how creative exports have almost doubled between 2010 and 2017. Creative services exports are the main driver of this trend, increasing by close to 150 per cent over the period and also increasing their share of overall UK services exports. In contrast, the lower panel of the same [Figure](#) shows how the share of creative goods has more or less stayed the same. The surging creative trade in services is also seen in imports, as shown by [Figure A-1](#) in the Appendix.

This is particularly remarkable given that services trade is typically subject to more restrictions than goods trade. The wider literature on international trade suggests that tradability of services is still affected by geographic forces and the need for face-to-face interactions (see [Eaton and Kortum \(2019\)](#), among others) and it is subject to more legal restrictions. Given the increasing importance of creative services, we discuss the importance of services trade barriers later in the paper.

Fact 1

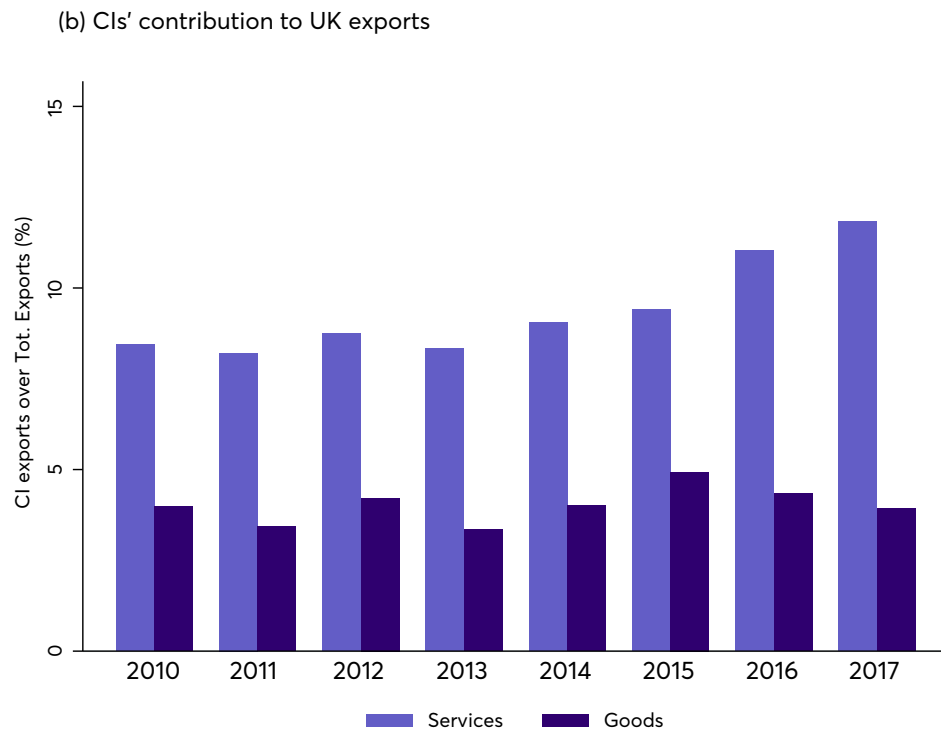
The fast rise in CIs' trade is driven by the expansion of trade in services.

Figure 1: Creative services and goods exports, 2010-2017



The upper panel describes trends in exports of goods and services, indexing 2010=100. UK represents total UK exports, CI represents exports for the Creative Industries only, and DCMS refers to all DCMS sectors, which includes the Creative Industries. The lower panel reports the share of creative services (goods) exports over UK total services (goods) exports.

Source: Authors' calculations based on DCMS Sectors Economic Estimates.

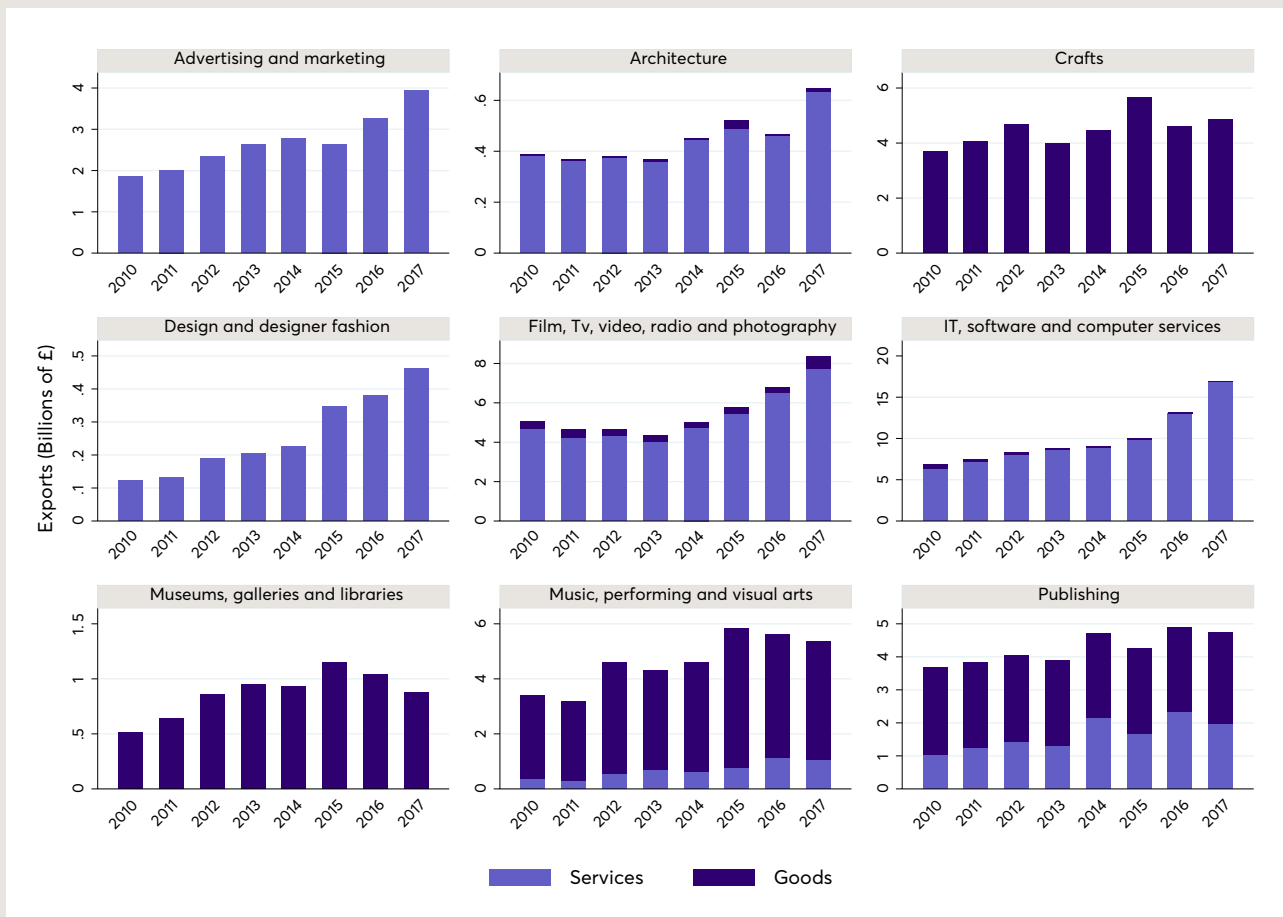


2.2 Sub-sectoral trends

Next, we look at the trends across the creative sub-sectors, as defined by DCMS, focusing primarily on exports. This is mainly due to the fact that only export statistics are available from DCMS for a sufficiently long time period to observe a trend (see Appendix A-2 for the import figures). Between exports and imports, the former are also usually considered to be the more insightful as a measure of international competitiveness (see, among others, Bernard and Jensen, 1999, and Melitz, 2003).

Figure 2 displays the evolution of creative sub-sectors' exports in billions of pounds from 2010 to 2017, the latest year available for both trade in goods and services.⁶

Figure 2: Creative services and goods exports, by sub-sector, 2010-2017



Exports of goods and services (billions of £) by CI sub-sectors over 2010-2017 period. Information on services exports for 'Crafts' and 'Museums, Galleries and Libraries' sub-sectors is not available. Goods exports for 'Advertising and marketing' and 'Design and designer fashion' sub-sectors are not associated with any good exports or imports.

Source: Our calculations based on DCMS Sectors Economic Estimates.

According to the DCMS's figures, 'Architecture', 'Design and Designer Fashion' and 'Museum, Galleries and Libraries' exported less than £1 billion in 2017.⁷ 'Advertising and marketing', 'Crafts', 'Film, TV, video, radio and photography', 'IT, software and computer services', 'Music, performing and visual arts' and 'Publishing' exported above £4 billion in 2017. The figure also shows how over the period considered, the services intensive exporters were (in alphabetical order) 'Advertising and marketing', 'Architecture', 'Design and designer fashion', 'Film, TV, video, radio and photography', 'IT, software and computer services',⁸ while goods intensive exporters were 'Crafts', 'Museums, galleries and libraries', 'Music and visual arts' and, to a minor extent, 'Publishing'. Overall, the sub-sectoral data echo the fact observed at the aggregate level: all sub-sectors have experienced an increase in exports over the sample period. Within this, services exports have experienced the largest increase across all sub-sectors that have services making up the majority of their exports. Consistent with this, note the slight slowdown we observe since 2015 in goods exports in most creative sub-sectors where exports are predominantly in goods.

Fact 2

The rise in creative services trade is seen across sub-sectors.

2.3 Sub-sectoral trade participation (intensive margin)

In this section, we further investigate the extent of sub-sectoral heterogeneity in terms of export values (sometimes called the 'intensive margin' of exports). To this end, we make use of the eight years of available data on both goods and services exports from 2010 to 2017 and estimate a regression with sectoral dummies (or fixed effects) where we consider export volumes (i.e. exports deflated using sub-sector-specific indices) as the dependent variable.⁹ In performing this exercise, we treat goods and services exports as separate observations.¹⁰ The coefficients on the sub-sectoral dummies should capture whether a sub-sector is exporting significantly more or less than a baseline sub-sector, which is in this case Publishing.¹¹

The results in column (1) of Table 1 suggest a separation of creative sub-sectors into three groups regarding exposure to exporting. Compared with 'Publishing', 'Crafts' and 'IT, software and computer services' are found to export significantly more than 'Publishing', whereas 'Architecture' and 'Design and designer fashion' export significantly less than 'Publishing'. All other sub-sectors are not statistically different from 'Publishing'. This is confirmed when we control for the nature of exports using a service dummy – column (2) – and when we take into account the effects of time trends – column (3).

The results in column (2) also confirm the significantly higher volume of services' exports relative to goods exports.

Table 1: Exporting in different creative sub-sectors

Reference sector: Publishing	(1)	(2)	(3)
Advertising and marketing	-8.844 (8.298)	-8.844 (7.611)	-8.844 (7.550)
Architecture	-20.169** (8.298)	-20.169*** (7.611)	-20.169*** (7.550)
Crafts	24.416** (10.163)	34.271*** (9.540)	34.271*** (9.464)
Design and designer fashion	-21.142** (8.298)	-21.142*** (7.611)	-21.142*** (7.550)
Film, TV, video, radio and photography	6.316 (8.298)	6.316 (7.611)	6.316 (7.550)
IT, software and computer services	29.612*** (8.298)	29.612*** (7.611)	29.612*** (7.550)
Museums, galleries and libraries	-13.234 (10.163)	-3.380 (9.540)	-3.380 (9.464)
Music, performing and visual arts	1.670 (8.298)	1.670 (7.611)	1.670 (7.550)
Services		19.709*** (4.068)	19.709*** (4.036)
t			1.405* (0.824)
Constant	22.442*** (5.868)	12.587** (5.753)	6.264 (6.805)
Observations	128	128	128
Adj. R-squared	0.31	0.42	0.43

Sub-sectoral exports fixed-effects regression. Dependent variable is real exports in millions of pounds, where export figures have been deflated using SIC codes deflators at the 2-digits level derived from ONS data (see Endnote 9 for further details). Services is a dummy variable denoting whether exports concern services; t captures a common time trend. Data are available for the period 2010-2017. Standard errors in parentheses. * p<0.10, ** p<0.05, *** p<0.01.

Source: Authors' calculations based on DCMS Sectors Economic Estimates.

The results in column (1) of Table 1 suggest a separation of creative sub-sectors into three groups regarding exposure to exporting. Compared with Publishing, Crafts and IT, software and computer services are found to export significantly more than Publishing, whereas 'Architecture' and 'Design and designer fashion' export significantly less. All other sub-sectors are not statistically different than Publishing. This is confirmed when we control for the nature of exports using a service dummy - column (2) - and when we take into account the effects of time trends - column (3).

The results in column (2) also confirm the significantly higher volume of services' exports relative to goods exports.

Fact 3

The Information and Communication Technology (ICT) related sector is the most important in the CIs in terms of the volume of exports.

2.4 Sub-sectoral trade participation at the extensive margin of trade

Alongside the intensive margins of trade, it is also important to consider the extensive margin. This can be measured in various ways. Here, we focus on the number of firms that participate in international trade relative to the total number of firms in the sub-sector, as estimated by DCMS (2019a).

Figure 3 documents the extent of business involvement in international trade within each sub-sector, whether as an exporter (panel a), as an importer (panel b), as an exporter and an importer (panel c) or as an exporter and/or an importer (panel d).¹² The vertical axis measures the share of firms active in international trade relative to all firms in the sub-sector. The horizontal axis indicates the number of firms active in international trade. While some caution should be used in drawing inference from so few observations, the four panels in the figure suggest there may be an inverse relation between the size of the extensive margin (i.e. the share of trading firms) and the number of trading firms in a sub-sector (as indicated by the fitted lines). In other words, those sub-sectors with more firms tend to have a smaller share of firms participating in international trade, that is, the extensive margin of trade is smaller.¹³ The extensive margin in the latter is about four times as high as in the former.

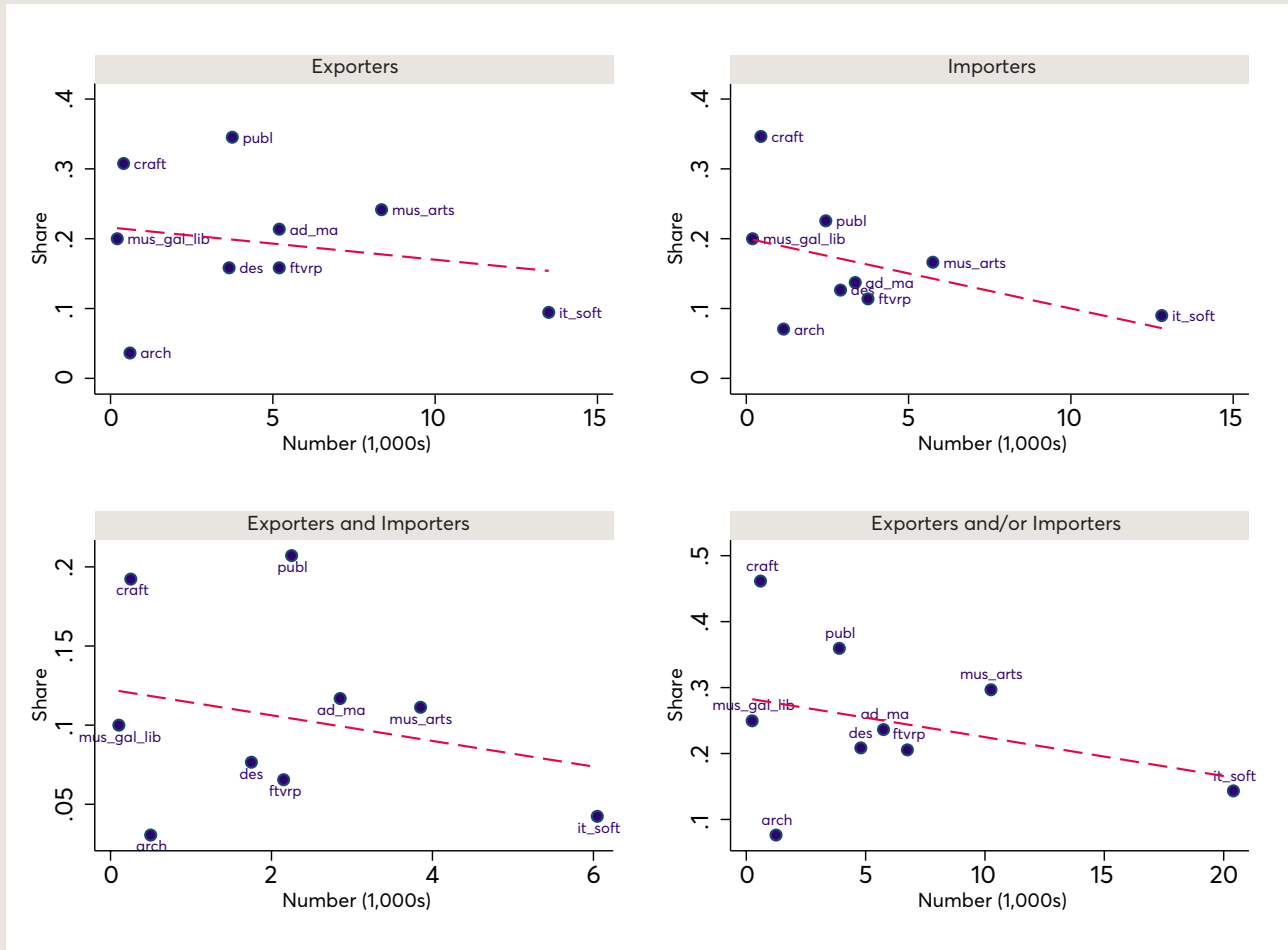
However, several factors can play a role beyond size. Indeed, comparison of two similarly sized sub-sectors (in terms of, say, export volumes or number of firms) – such as, 'Film, TV, video, radio and photography' (ftvrp) and 'Music, performing and visual arts' (music_arts) – shows how the latter displays, in both relative and absolute terms, significantly higher margins of business involvement in international trade.

Looking at the overall degree of participation in both importing and exporting may be particularly relevant when assessing the vulnerability to external shocks. Inspection of the two bottom panels of Figure 3 shows that 'IT, software, and computer services' and 'Crafts' are the sub-sectors with the highest exposure in terms of, respectively, absolute and relative (i.e. as a fraction of total number of businesses) numbers of trading businesses. 'Publishing' displays the highest share of businesses involved in two-way trading, with more than 50 per cent of businesses involved in trade both exporting and importing. By contrast, less than 30 per cent of businesses in 'IT, software, and computer services' recorded as exporting and/or importing are engaged in two-way trading.

Fact 4

Sub-sectors with relatively fewer firms are also the ones with a greater share of international firms.

Figure 3: Trade participation of Creative Industries' firms



These graphs compare sub-sectoral trade participation in terms of share of businesses versus total number of businesses exporting (top-left), importing (top-right), exporting and importing (bottom-left) and exporting and/or importing (bottom-right). Both x and y-axis values are averages over 2016-17. ad_ma: 'Advertising and Marketing', arch: 'Architecture', craft: 'Crafts', des: 'Design and designer fashion', ftvrp: 'Film, tv, video, radio and photography', it_soft: 'It, software and computer services', mus_gal_lib: 'Museums, galleries and libraries', mus_arts: 'Music, performing and visual arts', publ: 'Publishing'.

Source: Our calculations based on DCMS Sectors Economic Estimates.

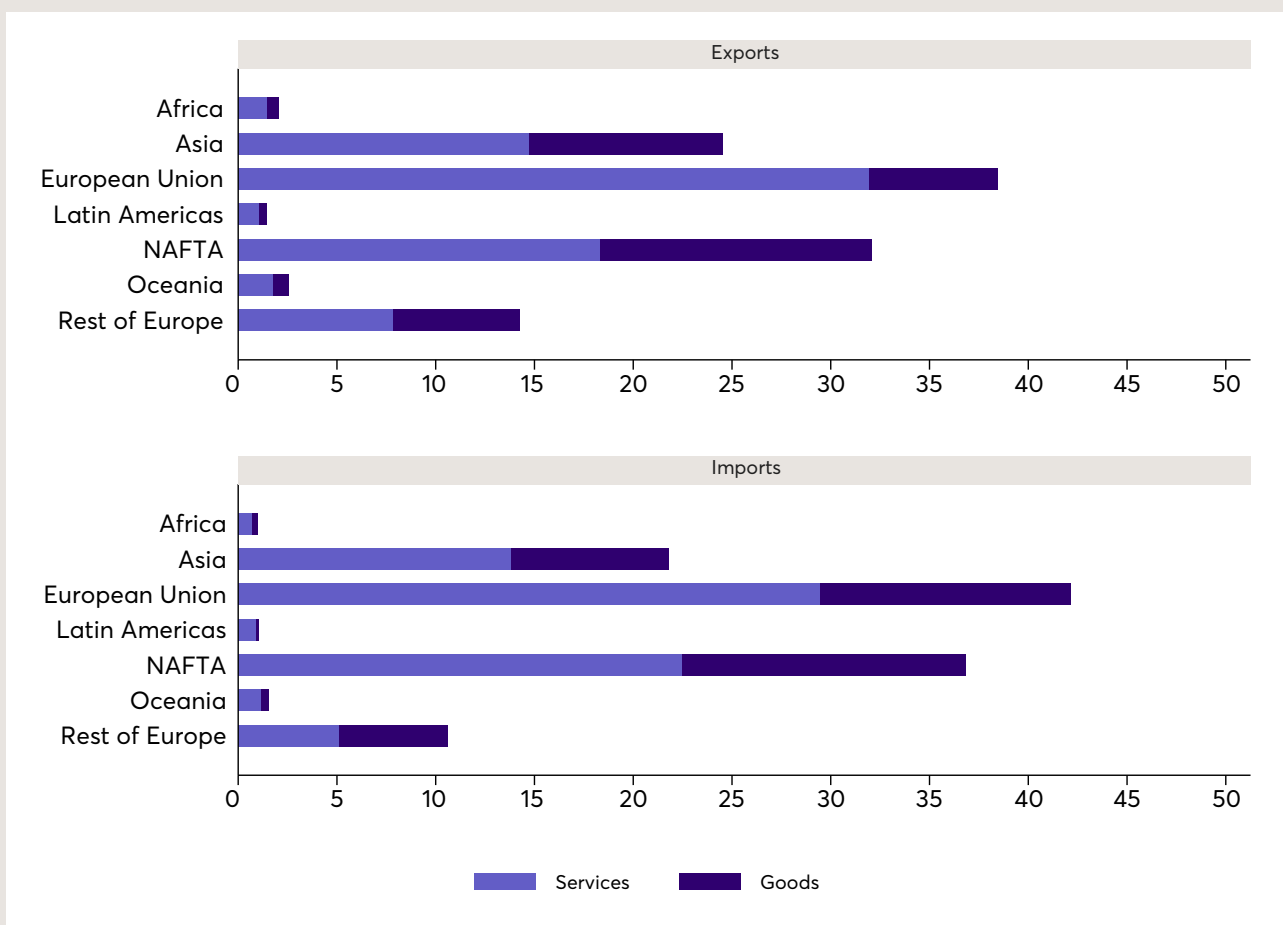
3

Directions of trade

3.1 Aggregate flows

Where are UK creative goods and services directed to and where are creative goods and services coming from? DCMS reports the directions of trade at the aggregate sector and disaggregate sub-sector level for the years 2016 and 2017. Figure 4 reports this information by illustrating the export and import flows of goods and services by macro area of destination (averages over the two years).

Figure 4: Exports and imports shares of goods and services across macro regions



Bars represent the share of each region in UK Creative Exports and Imports (2016-17 averages). Country groups are as in DCMS Sectors Economic Estimates 2017: Trade Report (DCMS, 2019b).

The European Union (EU) is by far the largest trade partner for the UK's CIs, with almost 40 per cent of exports directed to the EU (of which more than three-quarters is made of creative services) and more than 40 per cent of creative imports coming from the EU (almost two-thirds of exports made of creative services). Interestingly, while the EU is the largest export destination for creative services, it is the third most important export destination for creative goods. In terms of trade balance, as shown in [Table 2](#), while the UK is a net exporter of creative services to the EU, it is also a net importer of creative goods from the EU. DCMS also reports data for the 'Rest of Europe' that includes, among others, countries to which the UK has had preferential access like Iceland, Liechtenstein and Norway (part of the European Economic Area) and Switzerland (part of the single market). While the 'Rest of Europe' also includes other countries for which detailed trade is not reported, considering also the four mentioned countries increases considerably the trade share of the EU/EEA/Switzerland bloc, reduces the trade deficit in goods and further increases the trade surplus in services.

The North American Free Trade Agreement (NAFTA) bloc of countries (Mexico, the United States and Canada) is the second largest overall partner and the main partner for creative goods trade (with similar shares in terms of total exports and imports), but has much smaller shares in terms of services (less than 20 per cent of total exports and over 20 per cent total imports). Asia is the third largest trading partner. The UK has a positive balance in both goods and services trade with both blocs and with the other regional areas for which DCMS reports the data. Trade with Africa and Latin America is considerably smaller. However, in considering the market potential of these areas, one should also consider their longer term growth prospects, especially in the case of Africa.

Table 2: Geographical distribution of trade balances in creative goods and services

Trade Balance	Goods	Services
Africa	210.7	327.8
Asia	1194.3	1425.4
European Union	-1155.5	7122.5
Latin Americas	121.8	146.4
NAFTA	1797.6	2550.1
Oceania	240.8	296.2
Rest of Europe	1097.6	1583.5

Numbers in £ million. Country groups are as in DCMS Sectors Economic Estimates 2017: Trade Report ([DCMS, 2019b](#)).

Fact 5

The EU is the largest trading partner for UK creative goods and services, followed by North American Free Trade Agreement (NAFTA) countries and then Asia.

Fact 6

The UK's CIs enjoy a large trade surplus in services and a moderate deficit in goods with the EU/European Economic Area (EEA)/Switzerland and a trade surplus with the rest of the world.

3.2 Sub-sectoral directions of trade

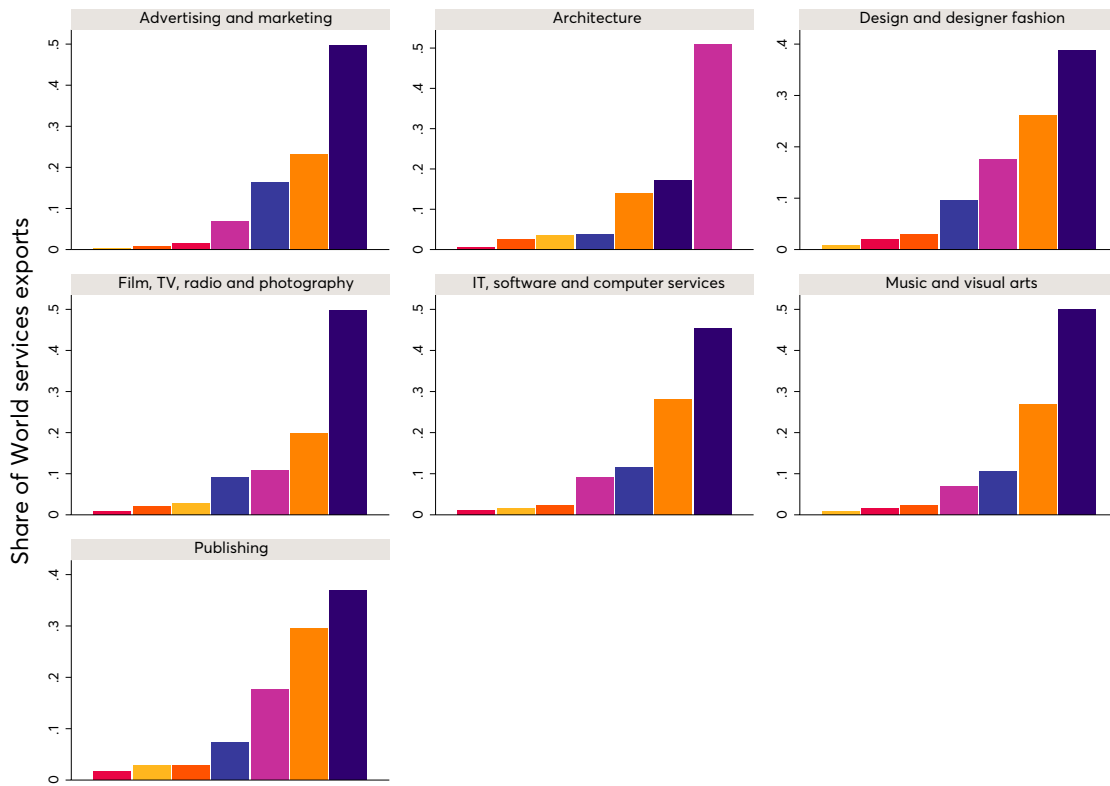
Next, we look at the direction of trade for individual sub-sectors. DCMS reports data for creative services exports and imports in 'Advertising and Marketing', 'Architecture', 'Design and designer fashion', 'Film, TV, radio and photography', 'IT, software and computer services', 'Music and visual arts', 'Publishing' and data for creative goods exports and imports in 'Architecture', 'Crafts', 'Film, TV, radio and photography', 'Museum, galleries and libraries', 'Music and visual arts' and 'Publishing'.

The disaggregated flows in Figure 5 highlight a more complex pattern of trade than that portrayed by the aggregate flows alone. For example, the EU is the main trade partner for services exports for all reported sub-sectors, except for Architecture, where Asia is the largest partner. Asia is also the third largest partner for 'Design and Designer Fashion' and 'Publishing'. Creative goods exports seem to be able to travel farther away than services: the EU is the main trade partner for only three sub-sectors ('Film, TV, Radio and Photography', 'IT, Software and Computer Services' and 'Publishing'), but the NAFTA countries receive the largest share of UK creative goods from 'Architecture', 'Museum, Galleries and Libraries' and 'Music and Visual Arts'.¹⁴ 'Crafts', for which there are no reported services trade statistics, mainly export goods to Asia.

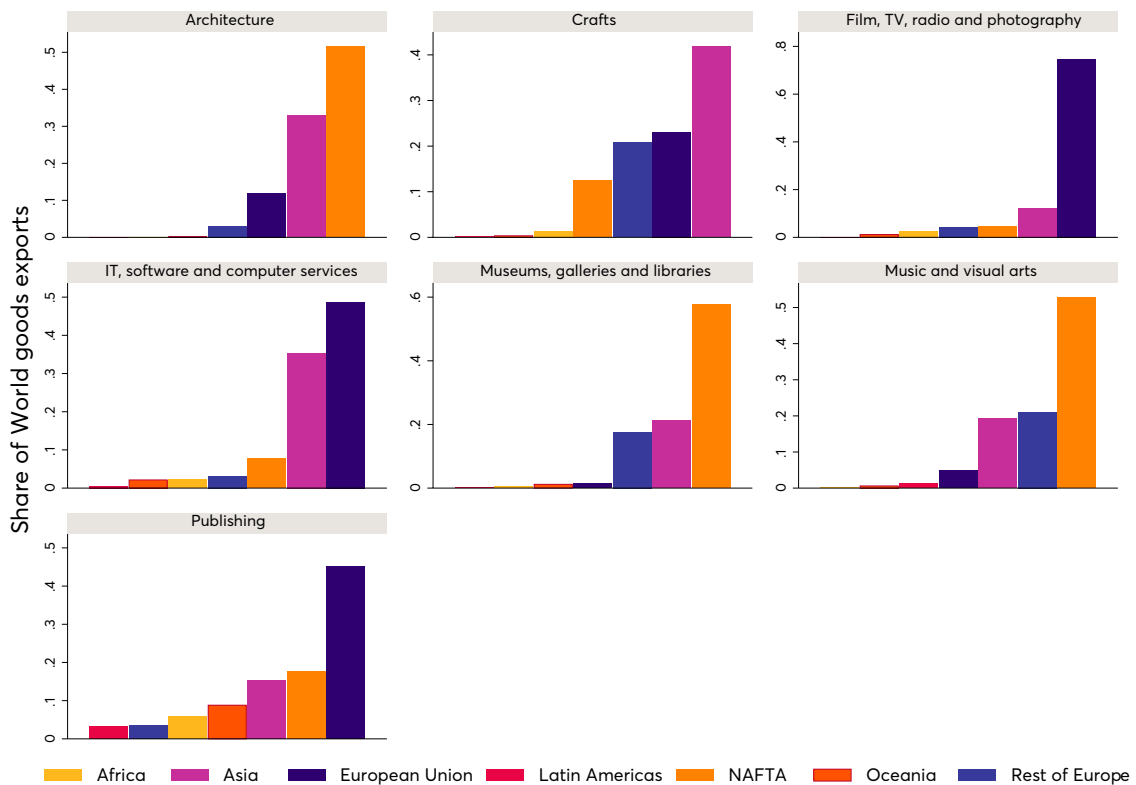
The picture becomes even more complex when we look also at imports in Figure 6. In this case, the EU is the main partner for services from 'Advertising and Marketing', 'Design and Designer Fashion' and 'IT, Software and Computer Services'. NAFTA is the area from which most imports come from in 'Film, TV, Radio and Photography', 'Museum, Galleries and Libraries', 'Music and Visual Arts' and 'Publishing'. This is likely a reflection of the particular strength of these sub-sectors in the US and the linguistic and cultural ties between the Anglo-Saxon economies. Asia is also the main trade partner for services imports in 'Architecture', though this sub-sector is amongst the lowest in its magnitude of trade flows. 'Crafts' exports mostly to Asia, but has the EU as its main import partner. 'IT, Software and Computer Services' mainly exports goods to the EU, but imports mostly from Asia. 'Film, TV, Radio and Photography' and 'Publishing', 'Museum, Galleries and Libraries' and 'Music and Visual Arts' each have the same largest goods export and import partner, respectively the EU and NAFTA.

Figure 5: UK exports of creative goods (bottom) and services (top) to macro regions by sub-sector

(a) Services exports



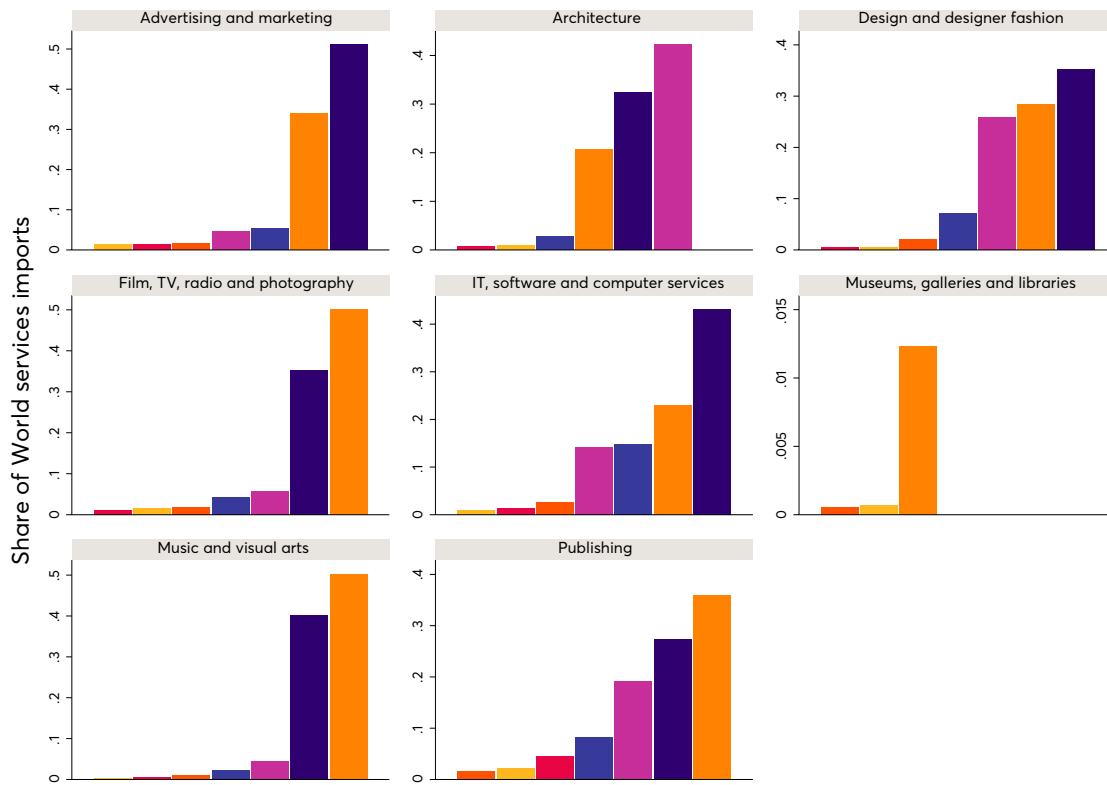
(b) Goods exports



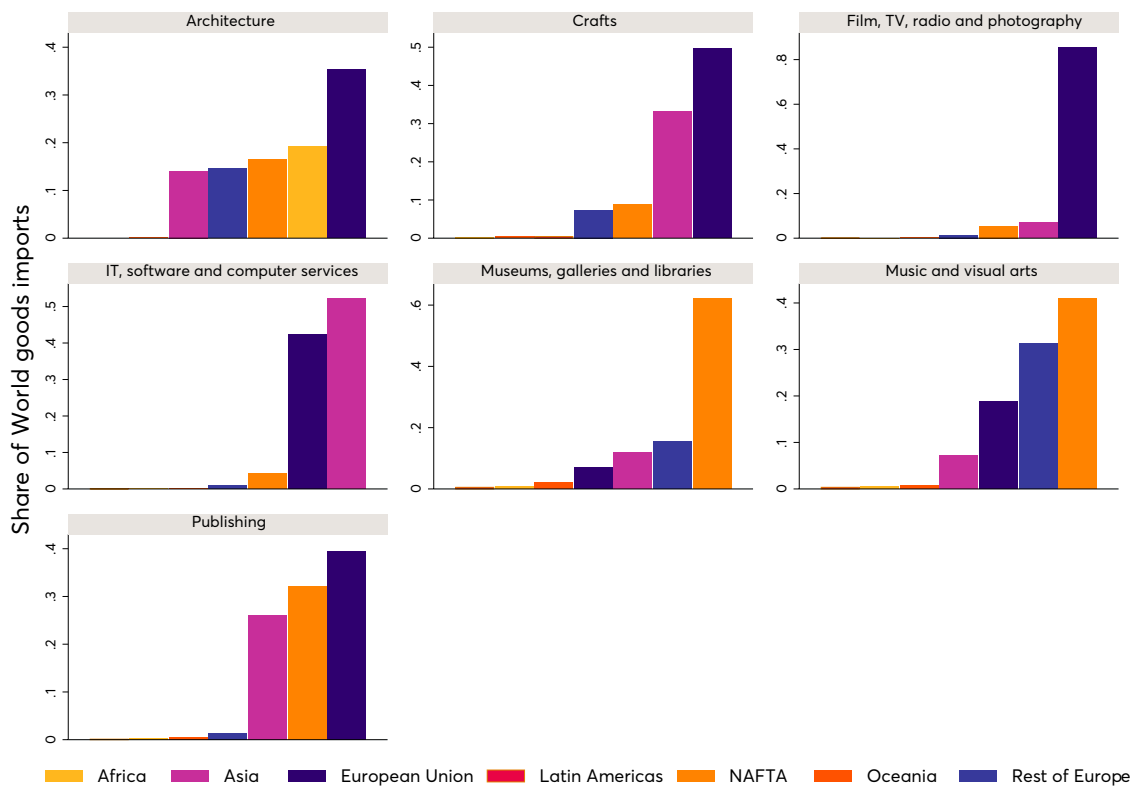
These graphs report information on macro destination of exports for each creative sub-sector. Figures are averages over 2016-17.

Figure 6: UK imports of goods (bottom) and services (top) from macro regions by sub-sector

(a) Services imports



(b) Goods imports



These graphs report information on macro destination of exports for each creative sub-sector. Figures are averages over 2016-17.

Clearly, these figures report shares rather than absolute numbers, which also matter. In this respect, it is interesting to note how the EU seems to be the most significant export and import partner for more (though not all) sub-sectors when it comes to services trade, a result that can reflect its greater geographical proximity to the UK, but also the relatively deeper integration of the EU services market, which makes it easier for services to flow within the EU relative to countries outside it. This is a point that will be discussed again below in the context of services trade restrictions. Interestingly, when it comes to goods trade, even though goods enjoy full freedom of trade within the EU, the pattern of trade is more complex than expected.

The complex pattern of the share of world exports and imports of creative goods and services across the CIs is important for policymakers to understand, as the UK negotiates its trade agreements with the EU and other partners now that it has left the EU. The pattern is also increasingly determined by complex global value chains. In the next section, we use the data available from DCMS to investigate the extent of intra-industry trade in the CIs and consider trade in value added, using the World Input Output Data (WIOD).

Fact 7

The main trade partner varies by sub-sector

7a The EU is the main partner for many sub-sectors, but not for all.

7b Services trade is relatively more EU-centric.

7c The main import and export partner often changes across sub-sectors.

4

Intra-industry trade and global value chains

4.1 Intra-industry trade

The preceding discussion shows that the UK both exports and imports creative goods and services, a phenomenon known as intra-industry trade (IIT) and first modeled in international trade theory by [Krugman \(1979, 1980\)](#). We can measure the extent of intra-industry trade (IIT) in each sub-sector by calculating the Grubel-Lloyd Index (see, [Grubel and Lloyd, 1975](#)):

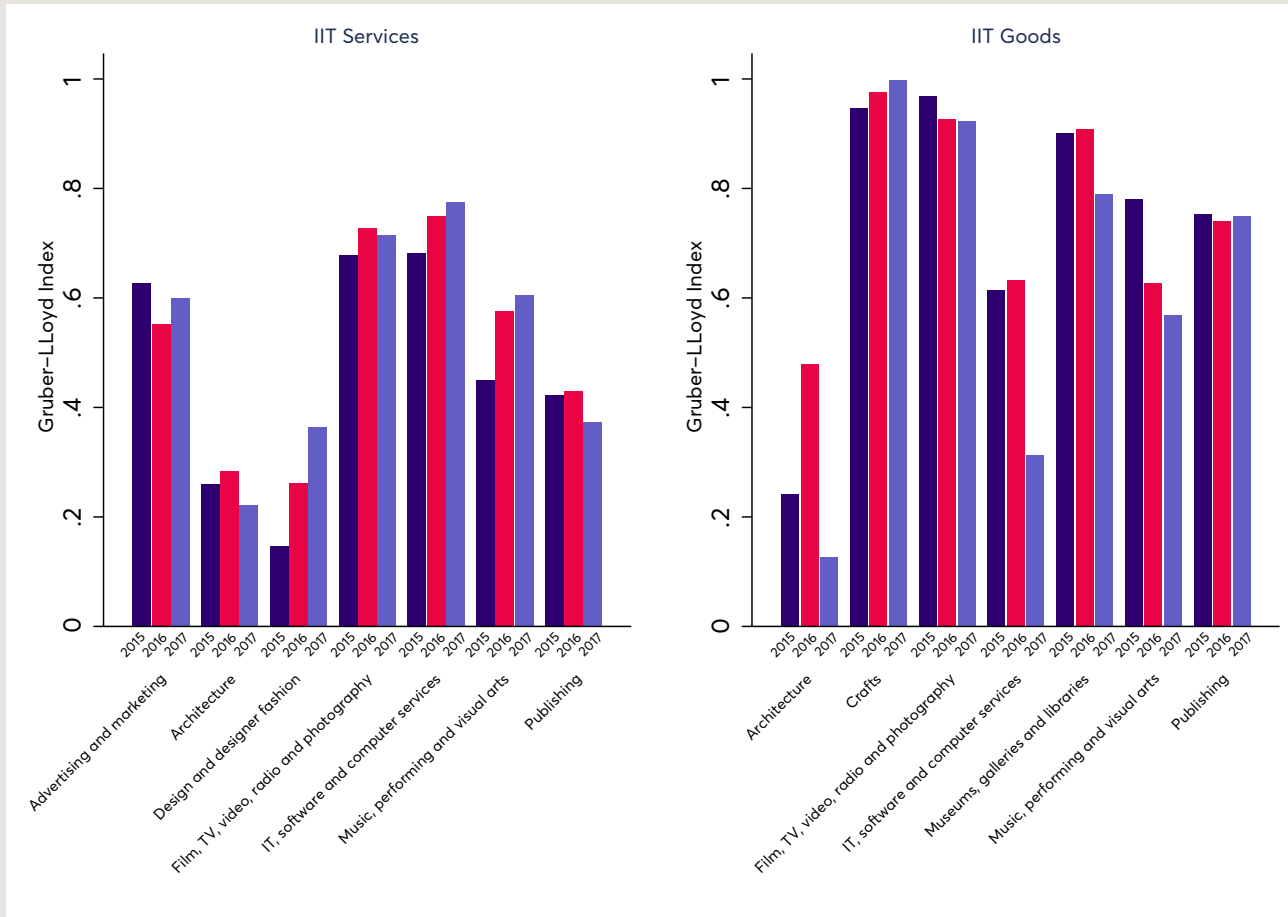
$$GLI_{kt} = 1 - \frac{|Exports_{kt} - Imports_{kt}|}{Exports_{kt} + Imports_{kt}}, \quad 0 \leq GLI_{kt} \leq 1,$$

which takes the value zero if the UK in a specific sub-sector either only imports or exports (i.e. no IIT) and the value one if that sub-sector exports and imports for the same value (full IIT).

IIT is an interesting phenomenon as it defies the theory of comparative advantage and the neo-classical resource-view of international trade as formalised in the Heckscher-Ohlin model. International trade theory links IIT, on the production side, to product differentiation and increasing returns to scale and, on the demand side, to the so called love-of-variety by consumers ([Krugman, 1991](#)). In this sense IIT can be defined as 'horizontal'. However, IIT can also be 'vertical' if it stems from the vertical integration of production and the consumption of intermediate goods by firms.

[Figure 7](#) breaks down IIT by sub-sector and by trade in goods and in services separately. Overall, it shows that goods trade displays higher intra-industry trade than services. However, the Figure also shows how the degree of IIT in services tends to increase over time, while remains unchanged or even decreases over time for goods, with the exception of 'Crafts', where IIT seems to approach 100 per cent.¹⁵ The rise in IIT in services is also in line with the trend increase in services noted earlier and the least exporting sub-sectors are also the ones with smaller IIT. It is also consistent with the fact that trade in services is mostly EU-centred: most IIT happens between countries with similar income levels.

Figure 7: Intra-Industry Trade



Gruber-Lloyd Index (GLI) for CI sub-sectors and type of trade over 2015-2017 period. GLI is built separately for services and goods as the data come from different sources and are not suited for aggregation (see DCMS (2019d)). Source: Authors' calculations based on DCMS Sectors Economic Estimates.

Fact 8

Trade-intensive CIs are characterised by strong intra-industry trade.

4.2 Trade in value added

Instead of looking at gross values of trade, the value actually produced within the UK and then exported can be more informative, especially when different sectors have different capacity to add value in the production process. Looking at Domestic Value Added (DVA) numbers rather than gross values corrects for the share of the total value that was created outside the UK.

Table 3 uses data from the World Input-Output tables to report gross exports, export shares, domestic value added (DVA), DVA shares, and DVA as a share of gross exports for some creative sub-sectors covered by WIOD and, for comparison, other services and non-creative sectors.¹⁶

Table 3: Trade in Value Added

	(1)	(2)	(3)	(4)	(5)
	Gross exports (GEXP)	GEXP as % of total gross services exports	Domestic Value-Added (DVA, M\$)	DVA as % of total services DVA	DVA as % of GEXP, (3)/(1)
Publishing activities	7,743	1.9%	6,892	1.9%	89%
Motion picture, video and television programme production, sound recording and music publishing activities, programming and broadcasting	9209	2.3%	8,183	2.3%	89%
Computer programming, consultancy and related activities, information service activities	13,969	3.5%	12,760	3.6%	91%
Architectural and engineering activities, technical testing and analysis	11,891	2.9%	10,907	3.0%	92%
Advertising and market research	4,832	1.2%	4,399	1.2%	91%
Other professional, scientific and technical activities, veterinary activities	16,678	4.2%	14,761	4.2%	89%
Other service activities	10,010	2.5%	9,268	2.6%	93%
All manufacturing	306,564	-	211,583	-	69%
All non-CI services*	316,330	78.4%	282,597	78.3%	89%

*WIOD breaks down its data over 56 sectors, starting with primary sectors (1-4), manufacturing (5-23), utilities (24-26), services (27-50) and public/government sectors (51-56). We take service intensive sectors to be those the from 27 to 56.

Source: Authors' calculations based on WIOD tables, numbers are in M\$, for 2014 (Timmer et al., 2015; Belotti et al., 2018; Borin and Mancini, 2019).

The table displays data for the WIOD sectors that could be most closely mapped to the DCMS sub-sectors using the 2-digit correspondence of the ISIC rev4 classification.

The sub-sectors related to the CIs are indicated in the table, with non-CI services and manufacturing added for comparison. The last column reports a striking feature: around 90 per cent of the value of services exports is due to value created within the UK. In comparison, in manufacturing, which is typically seen as having more substantial cross-border global value chains, indicates that 'only' around 70 per cent of the value of exports is created within the UK. These numbers, in line with the related literature on DVA in services internationally (Eaton and Kortum, 2019), provide further evidence on the impact the CIs have on the overall UK economy; the high domestic content of value added suggests that the industry's outcomes are likely to benefit directly local services producers.

Fact 9

90 per cent of the value of exports from the CIs is created domestically.

5

Sub-sectoral characteristics

The above analysis shows considerable differences in trade patterns among creative sub-sectors. Here, we explore further evidence of this heterogeneity by considering employment, human capital composition and its international vs. domestic breakdown, and Gross Value Added per worker.

5.1 Employment

Table 4 reports simple statistics for total employment and the shares of self-employment, the share of employees with a degree or higher education degree, the share of full-time workers and finally the share of non-UK workers.¹⁷ While total employment is a simple measure of the size of a sector, we know that each creative sub-sector is mostly comprised of a large number of micro and small enterprises and relatively few large firms (See [Figure A-3](#) in the Appendix). And, as we have seen above, trade participation is often smaller in sub-sectors with a larger number of firms. The share of self-employment over total employment is potentially another important indicator, as it can again be reflective of a sub-sector made up of very small firms. The share of workers with an education qualification is a measure of human capital, and the share of full-time employees may be interpreted as a rough indicator of the ability of a sub-sector to internalise functions, rather than rely on temporary workers. Finally, the share of non-UK employees in the workforce can be viewed as an indicator of the dependence of a sub-sector on skills that are not present domestically, as well as the attractiveness of the UK's CIs for international talent. Due to data limitations, 'Crafts' and 'Museums, galleries and libraries' are grouped as one sub-sector ('Crafts and museums', henceforth).¹⁸

For the available sample period and for each variable, the main figures indicate the average over the period for which the variable is available and the figures in parentheses report the growth rate over the same period. The table shows how most sub-sectors have experienced rapid employment growths: all sub-sectors, but 'Crafts and museums', and 'Publishing' have displayed two-digit growth rates. As anticipated in the previous section, 'IT, software and computer services' is the largest sub-sector in the CIs, with on average more than 600,000 workers, after a 50 per cent increase in jobs between 2011 and 2018. 'Music, performing and visual arts' is the second in terms of size and growth, and 'Film, TV, video, radio and photography' is the third in terms of size, but with a smaller growth rate.

For the CIs as a whole, on average over the period, 78 per cent of workers in the industry have been full-time employees, compared with a UK average of 72 per cent. However, the data shows substantial heterogeneity across sub-sectors: whilst full-time employment in 'IT, software and computer services' approaches 100 per cent, it accounts for less than 60 per cent in 'Crafts', 'Museums, galleries and libraries' and in 'Music, performing and visual arts'. The figures for full-time workers together with total employment growth suggest that,

in general, employment growth has translated into more full-time jobs, with the exception of 'Crafts and museums' where the share of full-time workers has increased in spite of a reduction in total employment. These sub-sectors are, however, the ones with the smallest average share of full-time workers. In contrast, 'Music, performing and visual arts' has seen an almost 40 per cent increase in total employment but a decrease in the share of full-time workers by 2 per cent. While this may not seem like a large change, it is a noticeable difference compared with the other sub-sectors in the CIs. 'Publishing' has experienced a reduction in total employment and a proportional reduction in full-time employees.

The CIs are notable in their greater share of self-employed workers, which is about twice the rate for the UK overall. Nonetheless, the table indicates that there is substantial variation between sub-sectors, with the share of self-employment ranging from 10 per cent for 'Crafts and museums' to 58 per cent and 71 per cent in 'Design and designer fashion' and 'Music, performing and visual arts', respectively. Interestingly, IT has the second lowest share of self-employment and that share is falling.

Table 4: Employment characteristics of creative sub-sectors

	Share (% over total employment)					
	Employed	Self-employed	Degree	Higher-education	Full time	Non UK
Advertising and marketing	172.4 (31.8%)	23% (6.3%)	62% (10.8%)	7% (-39.4%)	82% (0.7%)	10% (18.9%)
Architecture	97.6 (18.1%)	29% (5.0%)	70% (11.1%)	10% (-31.0%)	81% (1.5%)	11% (67.8%)
Design and designer fashion	136.8 (59.8%)	58% (2.4%)	47% (20.3%)	11% (-6.0%)	77% (0.3%)	12% (21.8%)
Film, TV, video, radio and photography	236.8 (16.1%)	39% (0.7%)	56% (4.8%)	9% (-4.0%)	78% (2.7%)	10% (1.3%)
IT, software and computer services	622.6 (51.8%)	19% (-8.4%)	64% (5.5%)	9% (-9.4%)	90% (0.7%)	15% (22.9%)
Music, performing and visual arts	265.5 (39.0%)	71% (-1.1%)	60% (11.4%)	10% (-6.5%)	57% (-2.3%)	8% (14.8%)
Crafts and museums	98.1 (-2.0%)	10% (-8.2%)	52% (2.2%)	8% (31.0%)	57% (15.5%)	8% (9.5%)
Publishing	201.1 (-5.7%)	30% (37.2%)	62% (14.4%)	7% (-27.1%)	73% (-5.4%)	14% (71.6%)
Creative Industries	1831.1 (30.7%)	34% (3.3%)	60% (8.7%)	9% (-11.2%)	78% (1.0%)	12% (27.0%)

This table summarises the employment characteristics of the CIs. For each variable, the main figure is the average over the sample period for which the variable is available. Total employment figures are in 1,000s units, while all others variables describe the average share over total employment, including self-employment in the sector. Figures in parentheses report the percentage change in the variable over the sample period. Accordingly, implied figures are obtained as the difference between overall figures for CIs and the corresponding figures for all creative sub-sectors for which information is available. Information regarding total employment and self-employment is available from 2011, while information on qualification profiles, nationality and full-time/part-time status is available from 2012. All employment figures are available until 2018.

For any part of the economy, growth prospects are linked to the availability of human capital and skilled labour. This is especially so for the CIs, as the deployment of creative talent is the defining feature of the Creative Industries (Bakhshi et al., 2013). DCMS (2019c) distinguishes between workers with Degree or equivalent, Higher Education, A-level or equivalent and GCSE A-C or equivalent, and other or no qualification. Table 4 reports the share of workers with Degree and Higher Education, as a proxy for education level or skills. The importance of skilled workers is confirmed in the data, since 60 per cent of workers in the CIs hold a degree, a share rising to 70 per cent if we include workers with higher-education qualifications. Within the CIs, 'Architecture' is the sub-sector with the highest share of graduates (70 per cent) over the 2012-2018 period, followed by 'IT, software and computer services' employing 64 per cent of graduates, which translates into nearly 400,000 workers, more than the corresponding number of graduates jointly employed by 'Music, performing and visual arts' and 'Film, TV, video, radio and photography' the second and third largest sub-sectors with respect to total employment. At the opposite end, Design is the least 'high-skilled' sub-sector, with less than half of jobs held by graduate employees, although this share rapidly increases over the period considered. More generally, the increasing demand for human capital and skills upgrading holds sector-wise, as degree-based employment is partially substituting falling high-education jobs.

The issue of skill-intensity is also related to that of the attraction of foreign talent. Foreign employees in the CIs account for 12 per cent of total employment – a share which is comparable to the wider UK economy, although the presence of foreign workers is growing at a faster pace in the CIs with a 27 per cent increase since 2012 compared with a 20 per cent increase in the UK as a whole (mirroring the more rapid growth in CIs employment growth more generally).

For 'Publishing' and 'Architecture', the growth in non-UK employees has been particularly rapid.¹⁹ But 'IT, software and computer services' still has the largest share of foreign employees, at 15 per cent in 2018.

Fact 10

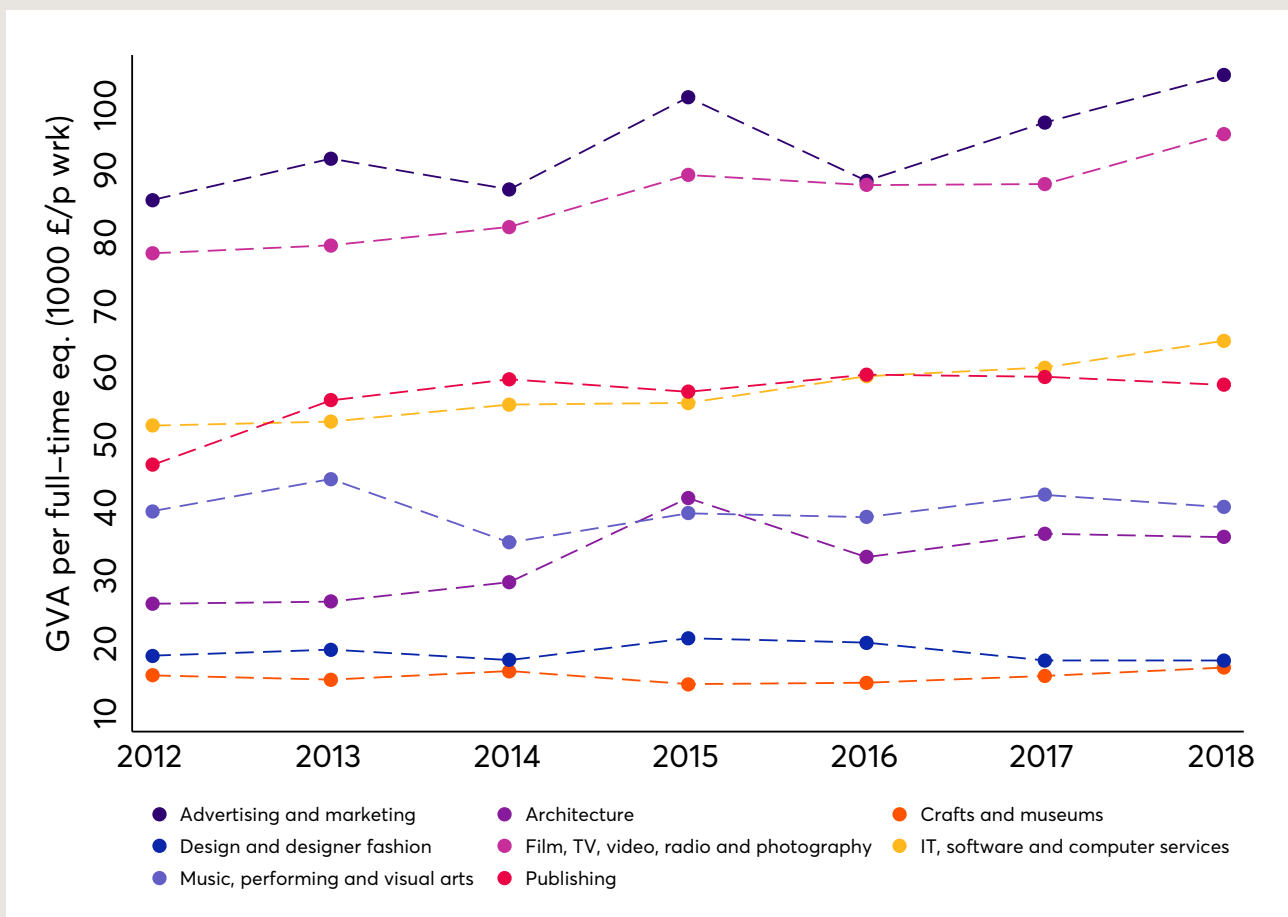
Domestic and international talent and skills are both important for the CIs

10a All sub-sectors are characterised by a high share of workers with a degree

10b 'Design and designer fashion' and 'Music, performing and visual arts' are dominated by self-employment

10c Foreign workers are important to support sector employment growth, specifically in 'Publishing', 'Architecture' and 'IT, software and computer services'.

Figure 8: GVA per full-time employment equivalent



This graph tracks the evolution of GVA per worker over 2011-2018 period, where the denominator is total employment units at full time equivalent (calculated on the assumption that part-time workers are employed on a 50 per cent basis).

5.2 Gross value added per worker

Both domestic and foreign human capital feed into productivity and productivity differences may help explain the international patterns of competitiveness observed across the creative sub-sectors. From the available data, it is possible to calculate a measure of labour productivity.²⁰ In order to take into account and mitigate the issue related to the extent of reliance on part-time work mentioned above, we correct the employment numbers to a full-time equivalent by assuming a part-time to full-time conversion rate of a half. This conversion rate is substantiated by past evidence.²¹ The Appendix reports also, for comparison, simple figures without this adjustment is not made (See [Figure A-4](#)).

[Figure 8](#) looks at the evolution of this measure of labour productivity across the UK's creative sub-sectors.²² Again, the graph shows a large degree of heterogeneity, especially between sub-sectors above and below a GVA of £40,000 per worker per year. 'Film, TV, video, radio and photography' and 'Advertising and marketing' are the top performing sub-sectors, reporting the highest GVA per worker and fastest growth rates. These two are followed by 'IT, software and computer services' and 'Publishing' above £50,000. 'Music, performing and visual arts' has been quite stable around £40,000, while 'Architecture' has caught up over time. Finally, 'Design and designer fashion' and 'Crafts and museums' do not tend to exceed £20,000, and appear not to have grown over time. Hence, the sub-sectors with the highest levels of GVA per worker per year also tend to have higher growth rates, which suggest that there may have been some sub-sectoral divergence.

Fact 11

Average (heads-based) labour productivity greatly varies across CIs sub-sectors, partly reflecting differences in human capital.

6

Services trade restrictions and UK creative services trade

Historically, services have not been highly traded on a global scale. However, recent trends show that trade in services has persistently outgrown that in goods. The share of services exports over total exports for the The Group of Seven (G7) countries has increased from 21 per cent in 2000 to 27 per cent in 2018, twice the increase recorded in services imports. The Chinese economy has seen services imports rise from 13.5 per cent in 2010 to 20.5 per cent in 2018, with exports shares remaining stable over the same period. According to the World Trade Organization (WTO) (2019), IT has been one of the most dynamic sectors in services trade, with world exports worth US\$ 438 billion. The prominent role of IT and the widely sustained growth of creative services trade is one of the facts from the above analysis. For the UK, in 2018 services exports and imports shares have increased to 46 per cent and 28 per cent, respectively, from 32 per cent and 24 per cent in 2010.²³

The tradability of services is traditionally limited by their greater trade costs. While services are in theory weightless, and therefore, should be less subject to transportation costs, other forms of 'frictions' are still relevant. For example, many services usually require the contemporaneous presence of the supplier and the consumer in the same place (the so-called joint production requirement). Also, for historical, legal and political reasons, services are traditionally more protected than goods. Professional services, for example, often require professional qualifications or, for safety and insurance reasons, the accreditation with a national professional body. Quality assurance or the need for insurance may also limit the extent of the international provision of services. Finally, the ability of firms to set up a foreign affiliate or the existence of short-term and long-term labour mobility are critical for services trade under the different modes of services trade identified by the General Agreement of Trade in Services: mode one is cross-border trade; mode two is consumption abroad trade; mode three is commercial presence trade; mode four is trade via the presence of natural persons.

Over time, technology, such as digitisation and advances in telecommunication, have made services trade cheaper and more accessible. Nonetheless, this is still limited by the greater extent of restrictions that apply to services. Broadly speaking, these are embedded in complex national regulatory frameworks and are found in some estimates to contribute for more than 25 per cent of services trade costs.²⁴

What are the sources of these restrictions? In order to answer this question, in this section we focus on the Services Trade Restrictiveness Indices (STRIs) developed by the Organisation for Economic Co-operation and Development (OECD). These indices quantify trade restrictions for services for OECD and a selection of non-OECD countries.²⁵ Based on a review of the national regulatory frameworks and experts' opinion, a number of measures are considered which affect the tradability of services, such as the ease of business entry and operations, the movement of people and the strength of competition. Accordingly, the STRIs result from the aggregation of five sub-indices tracking these and other regulatory aspects.²⁶

Table 5: Service trade restrictions by sector and sector aggregates

	Non-creative Sectors	Creative sectors	Architecture	Broadcasting	Computer	Motion pictures	Sound recording
STRI	0.266 (0.148)	0.245 (0.104)	0.261 (0.112)	0.302 (0.133)	0.234 (0.068)	0.217 (0.090)	0.211 (0.072)
Competition	0.041 (0.045)	0.015 (0.012)	0.010 (0.009)	0.027 (0.009)	0.011 (0.010)	0.009 (0.007)	0.017 (0.015)
Business entry	0.102 (0.089)	0.084 (0.088)	0.058 (0.055)	0.191 (0.118)	0.055 (0.037)	0.075 (0.068)	0.039 (0.036)
People entry	0.021 (0.016)	0.031 (0.020)	0.019 (0.012)	0.030 (0.015)	0.027 (0.017)	0.035 (0.020)	0.041 (0.026)
Reg. transparency	0.055 (0.051)	0.070 (0.053)	0.130 (0.077)	0.027 (0.011)	0.079 (0.031)	0.058 (0.022)	0.055 (0.022)
Other restrictions	0.047 (0.034)	0.046 (0.024)	0.043 (0.020)	0.026 (0.010)	0.061 (0.028)	0.041 (0.016)	0.059 (0.022)

This table reports average scores of services trade restrictions across countries and years for which information is available. Each index range from 0 to 1, where 0 indicates that the sub-sector is completely open to trade, and 1 completely closed. Figures are broken down distinguishing: i) creative and non-creative sub-sectors aggregates, ii) each creative sub-sector for which indices are available. Standard errors in parentheses.

Source: Authors' calculation based on the OECD STRI

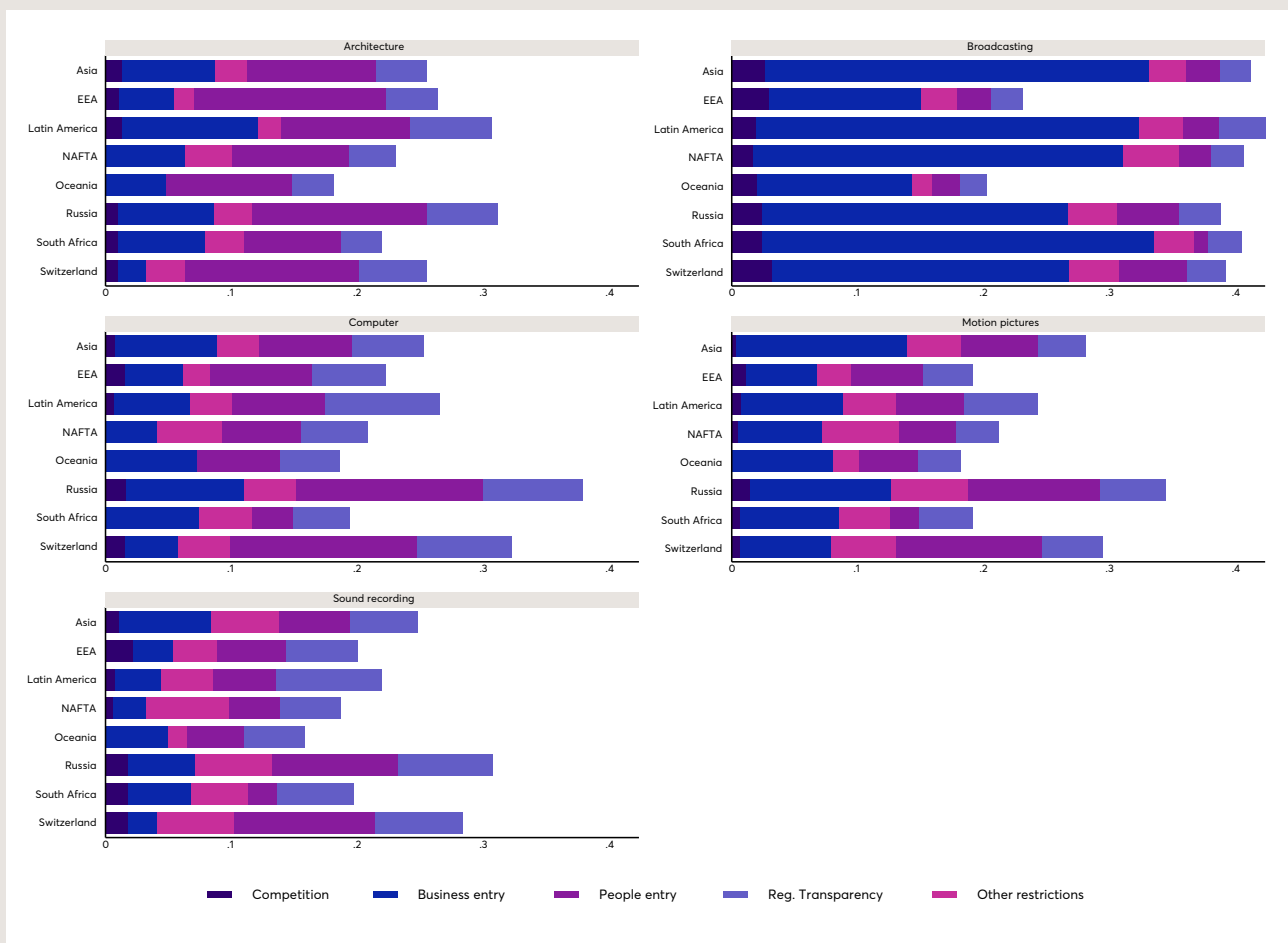
6.1 Restrictions related to creative vs. non-creative services trade

Measures of services trade restrictions are currently available from 2014 up to 2018 and cover 22 sectors, based on the ISIC Rev4 classification (see [Table A-1](#) in the Appendix for the correspondence between the OECD and the DCMS classifications). Five of these have some degree of overlap with the creative sub-sectors defined by the DCMS: Architecture, Broadcasting, Computer Services, Motion Pictures and Sound Recording. These indicators can therefore be used to compare how trade restrictions impact on creative services compared with their non-creative counterparts. Moreover, it is possible to compare the strength of the UK's restrictions to other countries and see how they have evolved over time. [Table 5](#) reports the STRIs of the five creative sub-sectors in the OECD classification and the average STRI of the non-creative sub-sectors.

Overall, note how trade restrictions in non-creative services are usually higher than in creative services, although with some variability. Regulations limiting business entry are the main source of trade restriction in creative services, contributing about 0.3 and 0.4 of overall restrictiveness. Restrictions due to the lack of regulatory transparency are the second most important, and are a major source of restrictiveness for Architecture, i.e. the indicator tracks bureaucracy costs hitting trade mainly via General Agreement on Trade in Services (GATS) mode three and four and the extent of Intellectual Property Rights' enforcement. Interestingly, the limitations affecting workers' mobility, according to the STRIs, are lower for the set of creative sub-sectors compared with the non-creative. This is particularly important given the traditional reliance of some creative sub-sectors on people mobility in order to trade (e.g. under GATS mode four).

Regulations affecting the operation of foreign businesses are the main source of restrictiveness for both Broadcasting and Motion Pictures, although the impact on the former is three times larger. A wide set of regulations is likely to affect GATS mode three of trade, by either imposing caps on equity participation and acquisitions or by imposing legal constraints on the organisation of businesses. Such regulations are also likely to raise barriers that are specific to those sub-sectors, with the provision of tariff barriers, i.e. import duties on films and, more generally, they are likely to impact Mode one trade as well by impacting digital cross-border trade.

Figure 9: Average level of services trade restrictions



This figure documents the average level of services trade restrictions, distinguishing among the five sub-indices components. Figures are broken down for each creative sub-sectors grouping, and represent averages over 2014-2018 and across countries belonging to each of the eight regional groupings.

The degree of regulatory transparency is the most important restriction affecting trade in Computer Services. Finally, Sound recording activities display, on average, the smallest STRI, with the main driver of restrictiveness being the various aspects concerning the legal provisions on royalties and subsidies ('other restrictions').

6.2 Services trade restrictions across the globe

After exploring the main restrictions to trade in services in the CIs vs. non-CIs, it is also interesting to look at the geographical differences in these restrictions and see how they have evolved over time. The former may be particularly important to understand the UK's directions of trade discussed earlier and the latter may help to comprehend the evolution of services trade over time. [Figure 9](#) presents the index by sub-sector and geographical area as defined by the OECD, while [Figure 10](#) provides additional detail for the specific case of the European Economic Area, of which the UK was, until Brexit, a member.²⁷

Fact 12

Creative services trade are subject to various degrees of regulation across the world. The restrictiveness of these regulations varies greatly across sub-sector and geography.

7

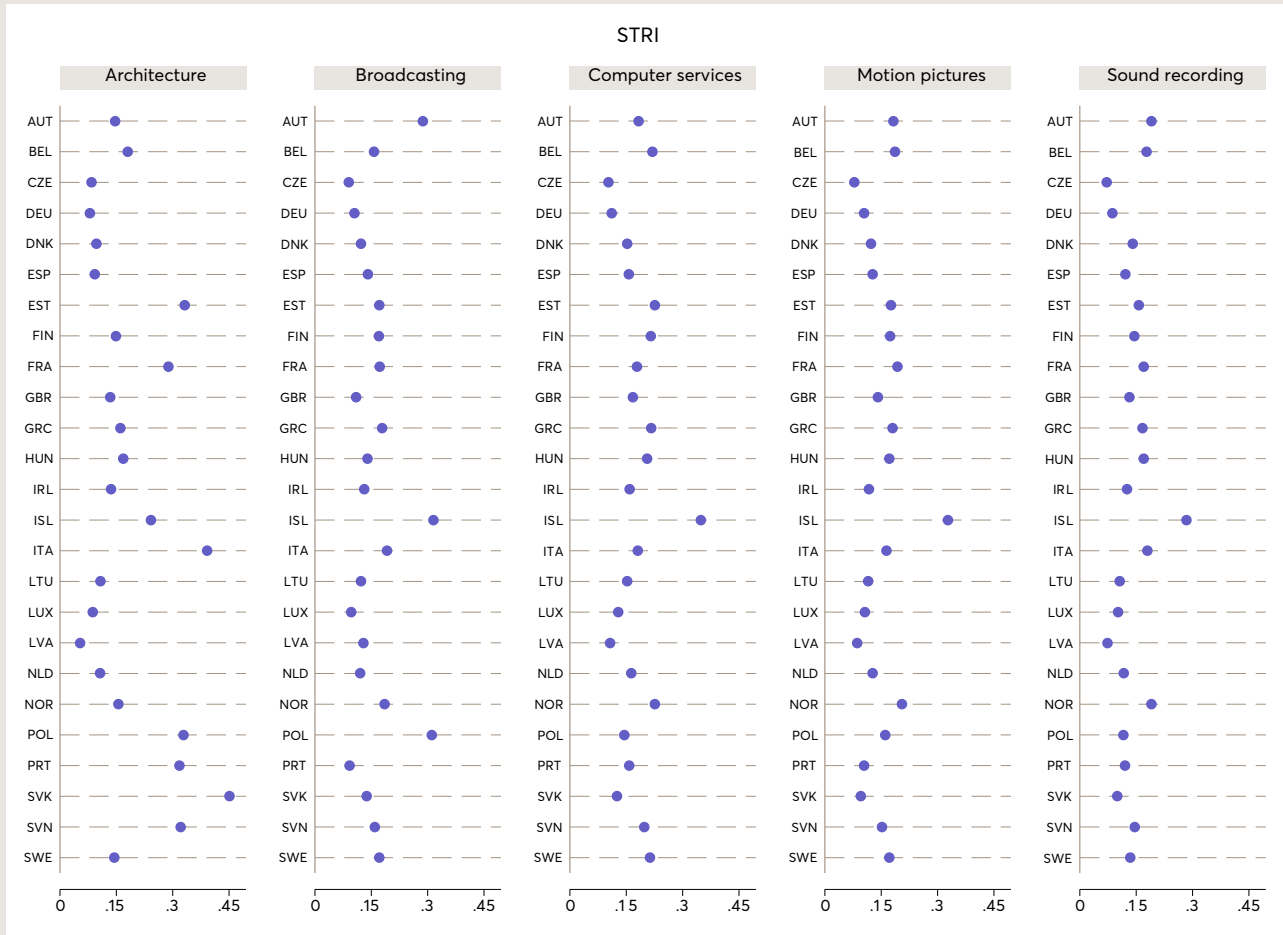
Summary and conclusions

This paper presents 12 facts on the current state of international activity of the UK's Creative Industries, using the sectoral and sub-sectoral data published by DCMS and by other international data sources. The much trumpeted growth of the UK's CIs in terms of GVA and employment is also reflected in their strong trade performance, in particular in creative services. The UK's CIs can therefore be expected to benefit from the likely further growth in services trade at the global level.

There is, however, also considerable heterogeneity across the creative sub-sectors. In terms of export flows, IT exports significantly more than the others. In terms of trade involvement by firms, the sub-sectors that have fewer firms are also the ones with the larger share of firms with international exposure.

Geographically, the EU remains the largest trading bloc for UK creative goods and services, followed by NAFTA countries and Asia, although there are again important heterogeneities across the sub-sectors in terms of primary trade partner and geographical destination of exports and origin of imports. The trade intensity of the CIs is also accompanied by strong intra-industry trade, i.e. the sub-sectors that export more, also import more. This can be linked to different explanations. On the one hand, intra-industry trade may reflect preferences for variety on the part of consumers in the presence of differentiated products and monopolistic competition. On the other, participation in global value chains also implies demand by firms for intermediate goods and services that enter domestic production and consumption or are exported for foreign production and consumption. A preliminary look at trade in value added for some creative sub-sectors, suggest that around 90 per cent of the UK export value is generated domestically, in line with most services-intensive sectors, and in contrast to manufacturing.

Figure 10: Services trade restrictions by sector and EEA country



This figure reports the average difference (over 2014-2018) in services trade restrictions for EEA countries concerning the regulatory frameworks regarding overall – world level – and intra-EEA trade relations. Positive differences reflect lower restrictions for trade in services within EEA.

Talent and skills, including through degrees, are crucial in the Creative Industries. The sub-sectors vary greatly in terms of their average value added per worker, degree attainment and employment of international talent.

Given their services-intensity, the CIs are particularly susceptible to legal barriers and restrictions. Overall, the UK is a relatively open country, but the barriers to trade in services remain strong around the world. While the EU still needs to make further progress in terms of services market integration, services trade restrictions are already lower inside the EEA countries than outside as a result of a long but steady process of harmonisation. This coincides with the stronger trade intensity in services between the UK and the EU compared to other trade partners, also in the CIs overall. As a result, the extent of future regulatory alignment or misalignment and EU market access will likely be critical for the CIs now that the UK has left the European Union.

A major qualification to the analysis presented here is that there are significant gaps in the evidence base. Firstly, while working with the data at our disposal, we acknowledge that not all production and trade of goods and services in the CIs is captured by the official statistics. This issue is especially relevant for those sub-sectors that are more service intensive and those characterised by greater digitisation. As a result, some of the trends described may, if anything, be under-represented and the CIs could be even more international than has been represented. Future work should go in the direction of addressing this issue.

Secondly, the role of international investment, from the UK to the world, and the other way around is largely unobserved. Anecdotally, this is known to differ considerably across the CIs, e.g. there is relatively low direct Foreign Direct Investment (FDI) in design, architecture, crafts, museums, in contrast to considerably high FDI in advertising, publishing, film, and music. Such international investment flows can be expected to closely follow trade flows, especially when it comes to services, but as of yet we lack the evidence. Thirdly, greater detail on the origin and background of international talent working in the CIs would likely help understand better what the sector needs and which policies could support it. In this direction, given the importance of labour mobility for services trade, an issue that is particularly important to understand is the reliance of the sector on the employment of domestic, but especially international, temporary work.

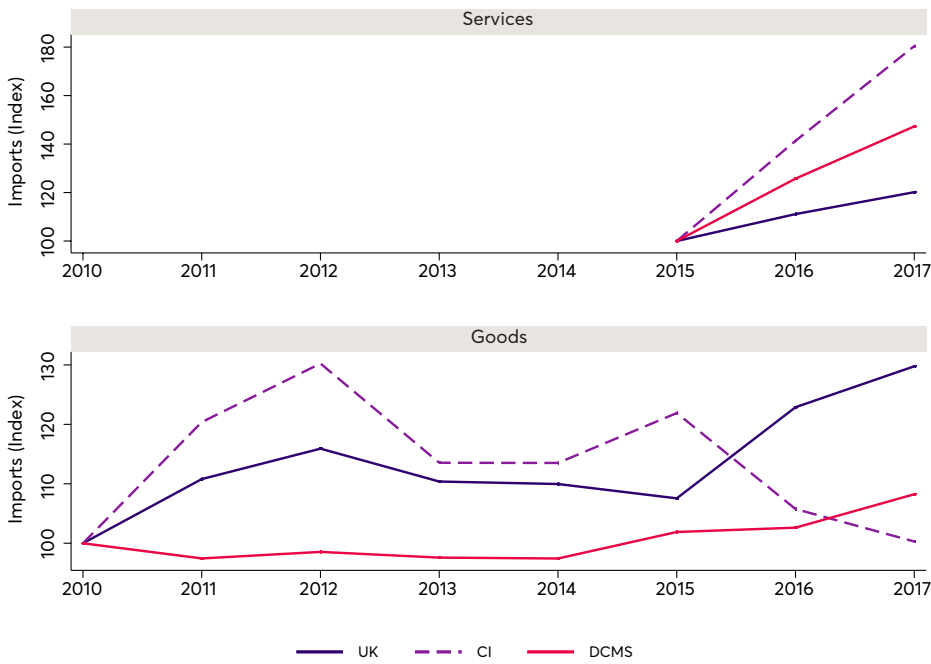
References

- Bakhshi, H., Hargreaves, I., and Mateos-Garcia, J. (2013). A manifesto for the creative economy. <https://media.nesta.org.uk/documents/a-manifesto-for-the-creative-economy-april13.pdf>
- Belotti, F., Borin, A., and Mancini, M. (2018). Icio: Stata module for economic analysis with inter-country input-output tables. Statistical Software Components.
- Benz, S. and Gonzales, F. (2019). Intra-industry trade database: Methodology and results. OECD Trade Policy Papers, No. 223, OECD Publishing, Paris.
- Bernard, A. B. and Jensen, J. B. (1999). Exceptional exporter performance: cause, effect, or both? *Journal of International Economics*, 47(1):1–25.
- Borin, A. and Mancini, M. (2019). Trade in goods and trade in services. *Measuring What Matters in Global Value Chains and Value-Added Trade*.
- Carey, H., Florisson, R., and Giles, L. (2019). Skills, talent and diversity in the creative industries. Evidence Review 2019/01. Creative Industries Policy Evidence Centre – The Work Foundation, Lancaster University.
- DCMS (2019a). DCMS sectors economic estimates 2017: Business demographics. Technical report.
- DCMS (2019b). DCMS sectors economic estimates 2017: Trade.
- DCMS (2019c). DCMS sectors economic estimates 2018: Employment. Technical report. DCMS (2019d). DCMS sectors economic estimates methodology. Technical report.
- DCMS (2020). DCMS sectors economic estimates 2018 (provisional): Gross value added. Technical report.
- Eaton, J. and Kortum, S. (2019). Trade in goods and trade in services. *World trade evolution: growth, productivity and employment*, pages 82–125.
- Gervais, A. (2017). Estimating the impact of country-level policy restrictions on services trade. *Review of International Economics*, 26(4):743–767.
- Grosso, M. G., Gonzales, F., Miroudot, S., Nordras, H. K., Rouzet, D., and Ueno, A. (2015). Services trade restrictiveness index (stri): Scoring and weighting methodology. *OECD Trade Policy Papers*, No. 177, OECD Publishing, Paris.
- Grubel, H. G. and Lloyd, P. J. (1975). *Intra-industry Trade, the Theory and Measurement of International Trade in Differentiated Products*. London, McMillan.
- Krugman, P. (1979). Increasing returns, monopolistic competition and international trade. *Journal of International Economics*, (9):469–479.
- Krugman, P. (1980). Increasing returns and economic geography. *American Economic Review*, pages 950–959.
- Krugman, P. (1991). Increasing returns and economic geography. *Journal of Political Economy*, pages 950–959.
- Melitz, M. J. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica*, 71(6):1695–1725.
- Rhodes, C. (2019). Financial services: contribution to the UK economy. Briefing Paper, N. 6193. House of Commons Library.
- Timmer, M. P., Dietzenbacher, E., Los, B., Stehrer, R., and de Vries, G. J. (2015). An illustrated user guide to the world input-output database: the case of global automotive production. *Review of International Economics*.
- UNCTAD (2018). Creative economy outlook. trends in international trade in creative industries. 2002-2015.
- WTO (2019). World trade report 2019. the future of services trade. Technical report.

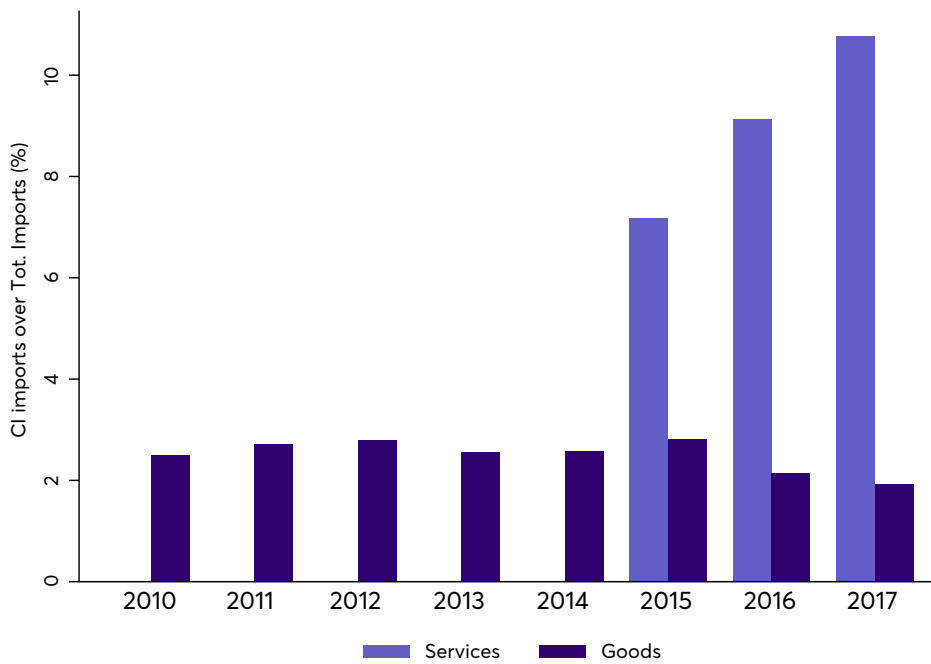
Appendix: Additional tables and figures

Figure A-1: Creative services and goods imports, 2010-2017

(a) Trends in imports of services and goods



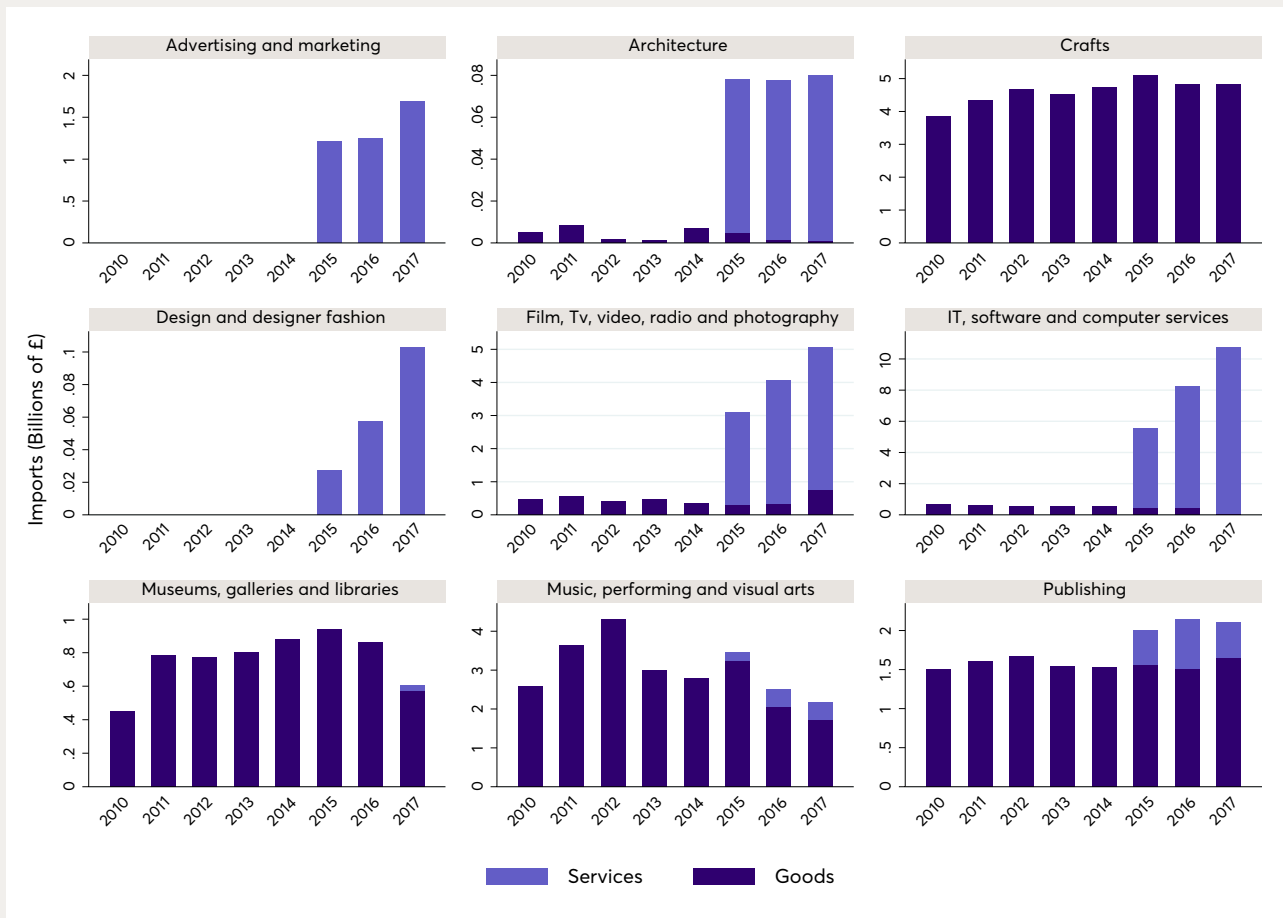
(b) CIs' contribution to UK imports



The upper panel describes trends in imports of goods and services, indexing 2015=100 (services) and 2010=100 (goods). UK represents total UK imports, CI represents imports for the Creative Industries only, and DCMS refers to all DCMS sectors, which includes the Creative Industries. The lower panel reports the share of creative services (goods) imports over UK total services (goods) imports.

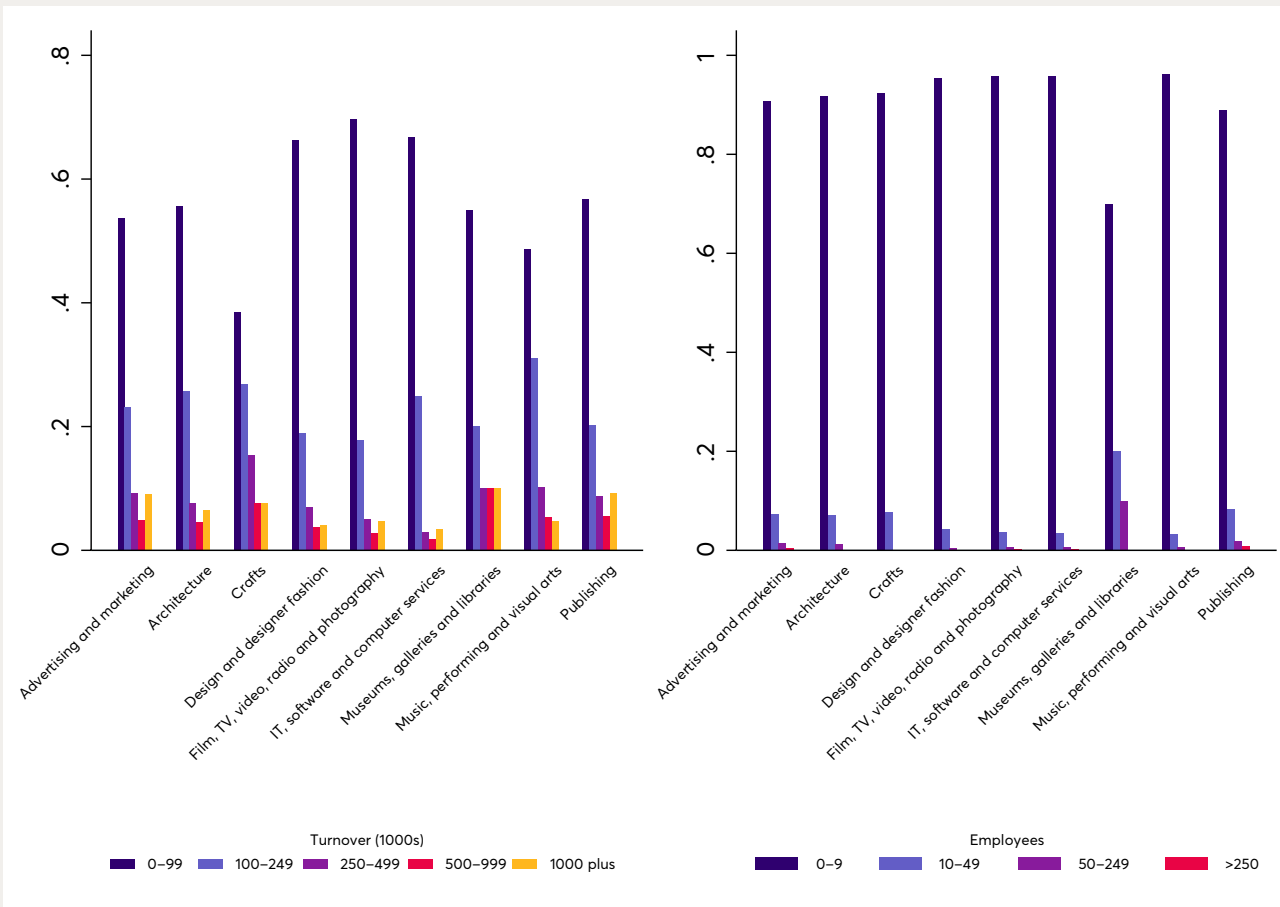
Source: Authors' calculations based on DCMS Sectors Economic Estimates.

Figure A-2: Creative services and goods imports, by sub-sector, 2010-2017



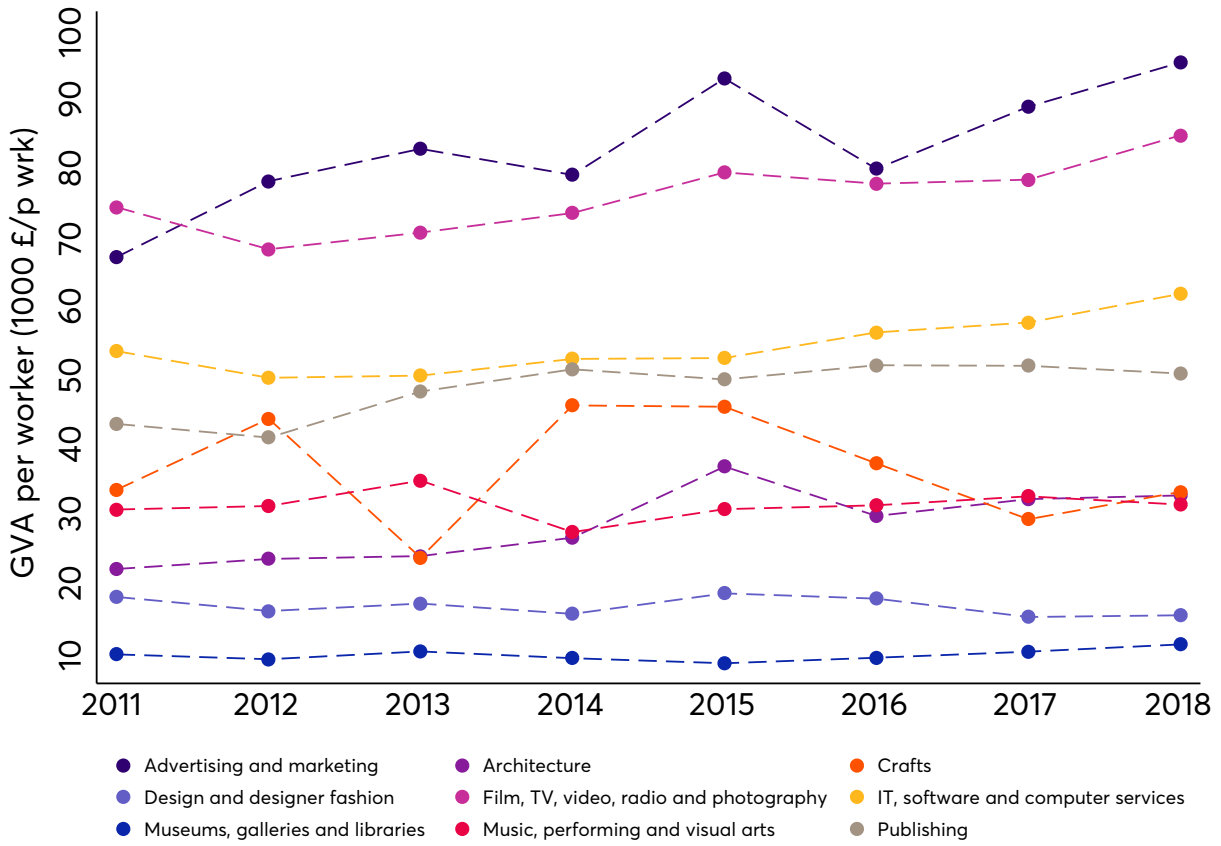
Imports of goods and services (billions of £) by CI sub-sectors over 2010-2017 period. Information on services imports for 'Crafts' and 'Museums, galleries and libraries' sub-sectors is generally not available (only 2017 services imports for 'Museums, galleries and libraries' are available). Goods exports for 'Advertising and marketing' and 'Design and designer fashion' sub-sectors are not associated with any product. Source: Authors' calculations based on DCMS Sectors Economic Estimates.

Figure A-3: Turnover and employment distributions for CI sub-sectors



This figure reports the distribution of businesses by turnover (left-panel) and employment (right-panel) for each creative sub-sector. Turnover classes are defined in £1,000s, while employment classes are based on the number of employees. Reported figures are averages over 2016-17. Source: Authors' calculations based on DCMS Sectors Economic Estimates.

Figure A-4: GVA per employment



The graph tracks the evolution of GVA per worker over 2011-2018 period, where the denominator is total employment units.

Source: Authors' calculations based on DCMS Sectors Economic Estimates.

Table A-1: Creative sub-sectors correspondence with STRI database

Creative sub-sector	SIC07 sub-sector	SIC07 code	OECD stri
Advertising and marketing	Public relations and communication activities	70.21	No
	Advertising agencies	73.11	No
	Media representation	73.12	No
Architecture	Architectural activities	71.11	Yes
Crafts	Manufacture of jewellery and related articles	32.12	No
Design and designer fashion	Specialised design activities	74.10	No
Film, TV, video, radio and photography	Motion picture, video and television programme distribution	59.1	Yes
	Motion picture, video and television programme post-production activities	59.1	Yes
	Motion picture, video and television programme production activities	59.1	Yes
	Motion picture projection activities	59.1	Yes
	Radio broadcasting	60.10	No
	Television programming and broadcasting activities	60.20	Yes
	Photographic activities	74.20	No
It, software and computer services	Publishing of computer games	58.21	No
	Other software publishing	58.29	No
	Computer programming activities	62.01	Yes
	Computer consultancy activities	62.02	Yes
Museums, galleries and libraries	Library and archive activities	91.01	No
	Museum activities	91.02	No
Music, performing and visual arts	Sound recording and music publishing activities	59.20	Yes
	Cultural education	85.52	No
	Performing arts	90.01	No
	Support activities to performing arts	90.02	No
	Artistic creation	90.03	No
	Operation of arts facilities	90.04	No
Publishing	Book publishing	58.11	No
	Publishing of directories and mailing lists	58.12	No
	Publishing of newspapers	58.13	No
	Publishing of journals and periodicals	58.14	No
	Other publishing activities	58.19	No
	Translation and interpretation activities	74.30	No

This table reports the correspondence between DCMS creative sub-sectors, the underlying SIC 2007 definitions and codes, as well as information on those sub-sectors for which OECD STRI data are available.

Endnotes

1. Figures on services exports reported by UNCTAD refer to a group of 38 advanced economies.
2. See Rhodes (2019).
3. Exports and imports shares of GVA are based on the 2017 CIs' GVA, which was close to £105 billion. Figures are obtained by aggregating trade in services and goods, although caution should be generally used in making such aggregation, as pointed out in DCMS (2019d). In the rest of the paper we will generally split figures for services and goods exports.
4. In order to explore such international position, in this work we use official national and international statistics. It is important to acknowledge that these may be unable capture all trade in the Creative Industries and also that the level of aggregation used may mask the underlying variability between more disaggregated but homogeneous groupings.
5. The last year of available DCMS data for trade in creative services is 2018 and 2017 for trade in creative goods data (see <https://www.gov.uk/government/collections/dcms-sectors-economic-estimates>). In order to allow comparability between the two, we only report here 2017 data.
6. It should be noted that official statistics may not capture the full extent of trade flows in some sub-sectors, where measurement may be more difficult, also as a consequence of digitalisation. Also for some sub-sectors, e.g. TV, the Office for National Statistics provides a separate statistics (see <https://www.ons.gov.uk/businessindustryandtrade/internationaltrade/datasets/internationaltradeinservicesreferencetables>). Here we have referred to the classification and reporting used in the DCMS statistics.
7. Some sub-sectors may contribute to exporting in indirect ways that are not well captured by trade statistics. For example, Museums are important in attracting international tourists and boosting international revenues in tourism. While potentially substantial, these are not considered here. Furthermore, for 'Crafts' and 'Museum, galleries and libraries' DCMS does not report services export data for confidentiality reasons. This does not mean that there are no exports, but that these may be so concentrated around few firms that confidentiality may be compromised. It may well be that these few firms are also very large services exporters.
8. In the DCMS statistics, Advertising and Marketing and Design and Designer Fashion are not associated with any product code under standard goods trade classifications (CN08).
9. In order to deflate nominal values, we have used ONS industry deflators, averaging out 3-4 digit SIC deflators to obtain the corresponding creative sub-sectors deflator. See <https://www.ons.gov.uk/economy/inflationandpriceindices/datasets/experimentalindustrydeflatorsuknonseasonallyadjusted>
10. Besides being interested in separately assessing the peculiarities of services against goods exports, we do so in light of some potential aggregation issues, as remarked in Section 1.
11. Publishing is chosen as the baseline, because it exports goods and services exporting in more equal proportions, as seen in Figure 2. While standard errors are indicated in brackets, the stars next to coefficient indicate whether the average exports (over time) of the corresponding sub-sector is statistically different from publishing.
12. There is currently no information publicly available on the foreign establishments of firms.
13. This is also true if we define size in terms of sub-sectoral employment. See Table 4 for further details.
14. However, the absolute value of creative goods trade in 'Architecture' is very small, see Figure 2.
15. In particular, 'Architecture' and 'IT, software and computer services' experience a sudden drop in 2017.
16. The numbers are from the World Input Output Data, www.wiod.org
17. For more in-depth analysis of the current status of skills, employment and diversity in the UK's CIs is provided in the recently published report of the Work Foundation (Carey et al., 2019).
18. Information on employment characteristics is generally unavailable for 'Crafts and museums' sub-sectors for disclosure reasons (with the exception of total employment figures and the employment of UK nationals). Accordingly, we consider the two sub-sectors jointly and derive information on employment as the difference between total CIs' figures and the sum of sub-sectors' counterparts for which information is available.
19. Foreign workers are almost equally divided between EU and non-EU nationals, though the relevance of EU workers has increased over the considered period (not reported).
20. Ideally, one would like to use a measure of total factor productivity rather than simple labour productivity. Our current choice is dictated by data limitations and the lack of theoretical underpinnings on the production function of creative firms.
21. Indeed, 2018 data from the 'Annual Survey and Hours and Earnings' (ASHE) reports that the median number of hours worked for UK full-time and part-time employees is 37.5 and 18.8 hours, respectively, i.e., an implied part-time/full-time ratio equal to 0.5. The same holds true when looking at the 2012 data. Still, these ratios do not display dramatic variations across UK regions, ranging from 0.48 to 0.53 in 2018 (from 0.49 to 0.52 in 2012). See <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/latest#detailed-analysis-of-earnings-and-hours-worked>
22. The patterns on GVA per employment do not change if we focus on skills endowments across sub-sectors, i.e. by considering the number of employees holding a degree and/or higher qualifications.
23. See OECD Balance of Payments Statistics at https://stats.oecd.org/Index.aspx?DataSetCode=MEI_BOP6
24. See WTO (2019). Still, using country level data, Gervais (2017) estimates, using measures of trade restrictions, that a 1 per cent increase in such restrictions leads to a decrease of 2 per cent of services trade flows.
25. See <https://www.oecd.org/trade/topics/services-trade/> Non-OECD countries included in the dataset are: Brazil, the People's Republic of China, Costa Rica, India, Indonesia, Malaysia, the Russian Federation and South Africa.
26. See Grosso et al. (2015) for more detail on the index and on the scoring and weighting methodologies.
27. The breakdown of EEA countries still includes UK within EEA member countries as for the period 2014-2018. For further details on the data and methodology, see Benz and Gonzales (2019).

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 www.pec.ac.uk and [@CreativePEC](https://twitter.com/CreativePEC)

If you'd like this publication in an alternative format such as Braille, or large print, please contact us at: enquiries@pec.ac.uk

Creative Industries Policy & Evidence Centre

Led by **nesta**

Creative Industries Policy and Evidence Centre (PEC)
58 Victoria Embankment
London EC4Y 0DS

+44 (0)20 7438 2500

enquiries@pec.ac.uk

[@CreativePEC](https://twitter.com/CreativePEC)

www.pec.ac.uk

