

# Screen Business

**How screen sector tax reliefs  
power economic growth  
across the UK**

A report commissioned by BFI from  
Olsberg•SPI with Nordicity

October 2018

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# Foreword

The UK is one of the best places in the world to make films, high-end TV programmes, video games and animations. I'm immensely proud of the support that the government gives to these industries, which is why I am delighted to welcome the BFI's report on the economic impacts of the UK's screen sector.

From TV shows like *The Crown*, to films like *Darkest Hour*, and animations like *Peppa Pig*, our creative industries are intrinsic to the rich cultural fabric of the UK. But they're also an important part of a dynamic and diversified economy, and a key component of our great, global trading nation.

That is why this government is committed to supporting our highly-skilled and innovative creative industries through creative sector tax reliefs. They have powered growth in the sector, helping to develop clusters of excellence across the UK like those in Dundee (video games) Cardiff (TV) and Church Fenton in North Yorkshire (film and TV).

In the last year alone over £850 million of support was provided – and since the reliefs were introduced they have benefitted 2,420 films, 310 high-end TV programmes, 480 video game productions, 145 animation productions and 75 children's TV programmes. Tens of thousands of jobs have been supported through these reliefs, and as this report shows they contribute billions of pounds to the UK economy.

I thank the BFI for its valiant efforts, not only in promoting the screen sectors, but also in improving its evidence base of the strong impact that they have on our economy.

I am confident that the creative industries will continue to grow, provide strong employment and be the face of British culture to the world in future years.



**Rt Hon Philip Hammond MP**  
Chancellor of the Exchequer

This report demonstrates the huge value of the screen sector tax reliefs to both industry and the wider UK economy. For the first time ever, it sets out how film, video games and high-end, children's and animation television productions have flourished since their introduction - delivering nearly £8bn to the UK economy and generating over 137,000 jobs in 2016 alone, while driving further business for industries such as merchandising and tourism too. The reliefs are also of huge cultural importance - enabling talent across the screen sectors to produce the richest possible range of films, television programmes and video games, which create IP and are loved by audiences both at home and around the world.

The BFI commissioned *Screen Business* to provide the solid evidence of success needed to attract continued public and private investment in the screen industries. The analysis is based on best practice economic modelling to capture the sector's incredible value. It will empower policymakers at every level of local, national and UK-wide government to help create the best possible conditions for future growth - including through the maintenance of the screen sector tax reliefs.

The combination of these reliefs with our renowned and distinctive creativity, world-class skills and sophisticated facilities and infrastructure allow the sector to thrive. It is the BFI's mission to maintain and improve this globally competitive environment for the future. We will use the evidence *Screen Business* provides in order to do so as effectively as possible. This includes working with government and industry partners to support individuals with creative talent from any background through a programme of skills and training, building tomorrow's workforce, and investing in screen clusters across the nations and regions to grow production capacity.

The screen sectors are a huge economic asset to the UK and support our screen talent to deliver content enjoyed worldwide. This report helps to prove so irrefutably. With the maintenance of the screen sector tax reliefs and continued investment in nurturing diverse creative talent, skills and infrastructure by both government and industry alike, we have every confidence they will remain so in future.

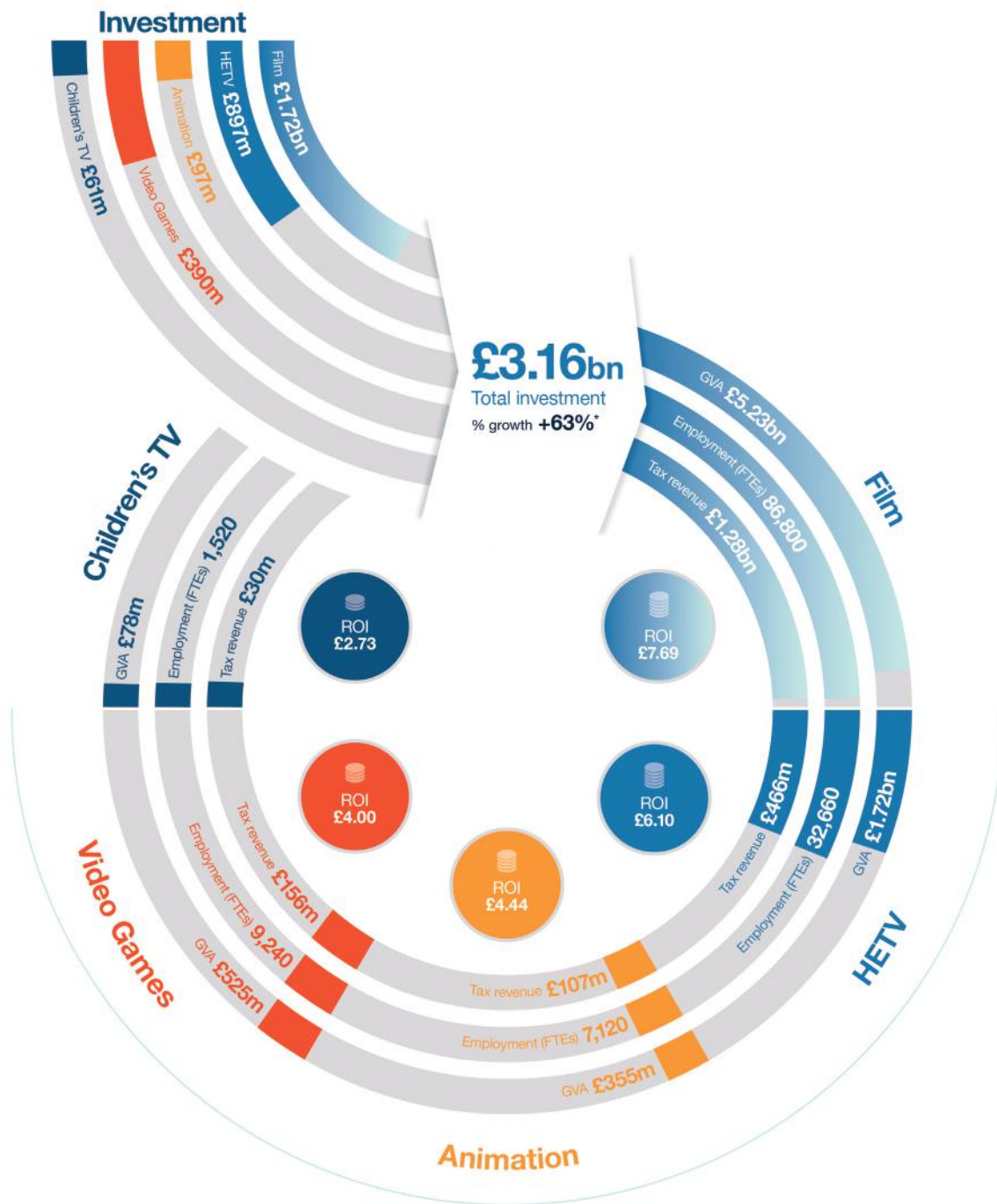


**Amanda Nevill CBE**  
Chief Executive, BFI

# Summary



# Tax relief-supported impact in 2016



**£7.91bn**

Total GVA  
% growth +73%\*

**£2.04bn**

Tax Revenue  
% growth +67%\*

**137,340**

Employment FTE's  
% growth +62%\*

\*Growth 2013-2016 for film, HETV and animation

# Context

The image features a vibrant orange background. A large, solid blue rectangle is positioned in the upper-left quadrant. The word "Context" is written in a bold, white, sans-serif font in the top-left corner of this blue rectangle. In the bottom-left corner, a white vertical bar extends downwards, partially overlapping the blue rectangle and the orange background. A dark blue, triangular shape is located at the bottom-right corner of the blue rectangle, pointing towards the bottom-right.

The *Screen Business* study provides the first, comprehensive analysis of the impact of each of the screen sector tax reliefs currently in place in the UK. The work was undertaken by Olsberg•SPI with Nordicity and commissioned by the BFI through its National Lottery-supported Research and Statistics Fund. Its scope and objectives were agreed by a steering group of industry partners including the BFI, British Film Commission, UK Screen Alliance, Ukie, Pinewood Group and Pact. The report updates the previous analysis published in 2015 and takes a refreshed approach to the calculation of economic contribution by applying HM Treasury Green Book 2018 principles and best practice economic modelling to estimate accurately the impact of these important revenue generating tax reliefs to the economy, HM Government, investment in infrastructure and on employment.<sup>1</sup>

The screen sector tax reliefs work, in combination with the skills base and infrastructure, to make the UK a competitive and stable workplace to develop and produce screen sector content. The Film Tax Relief (FTR) was introduced in 2007 and followed by the High-End Television Tax Relief (HETR) and the Animation Programme Tax Relief (ATR) in 2013, the Video Games Tax Relief (VGTR) in August 2014 and the Children's Television Tax Relief (CTR) in 2015. For the first time this report includes analysis of the impact of the VGTR and the CTR, and thus provides a unique and comprehensive picture of the total economic impact of UK production tax incentives for all screen sectors.<sup>2</sup>

This is also the first time the impact of the tax reliefs on the visual effects sector has been analysed. This sector, whilst not a direct recipient of its own tax relief, is a vital, creative element of the UK production value chain across film, High-End Television (HETV) and animation programmes in particular. The findings show how the incentives have contributed to growth of this sector in the UK which is held in high regard globally as a centre of technological innovation and skills excellence.

<sup>1</sup>. The economic contribution of the UK's film, high-end TV and animation programming sectors, February 2015 which is available at [bfi.org.uk/education-research/film-industry-statistics-research/reports/uk-film-economy](http://bfi.org.uk/education-research/film-industry-statistics-research/reports/uk-film-economy)

<sup>2</sup>. Separate analyses of non-Tax Relief impacts in the Video Games and VFX sectors can be found in Appendices 1 and 3; an analysis of Animation within the Tax Reliefs can be found in Appendix 2 of the full report

# Key Findings

2

The key findings of this analysis of the economic impact of the screen sector tax reliefs examines their contribution to:

- Production investment
- Jobs and employment
- Productivity
- Innovation
- The UK economy
- UK infrastructure and facilities
- Other benefits such as creation of talent and intellectual property, exports, merchandising, tourism and UK brand promotion

## 2.1 Delivering growth in production investment

Production spend is the rocket fuel of the screen industries. Investment in the development and creation of visual content, supported by the screen sector tax reliefs, drives the direct, indirect and induced and spillover impacts that are analysed in this report.

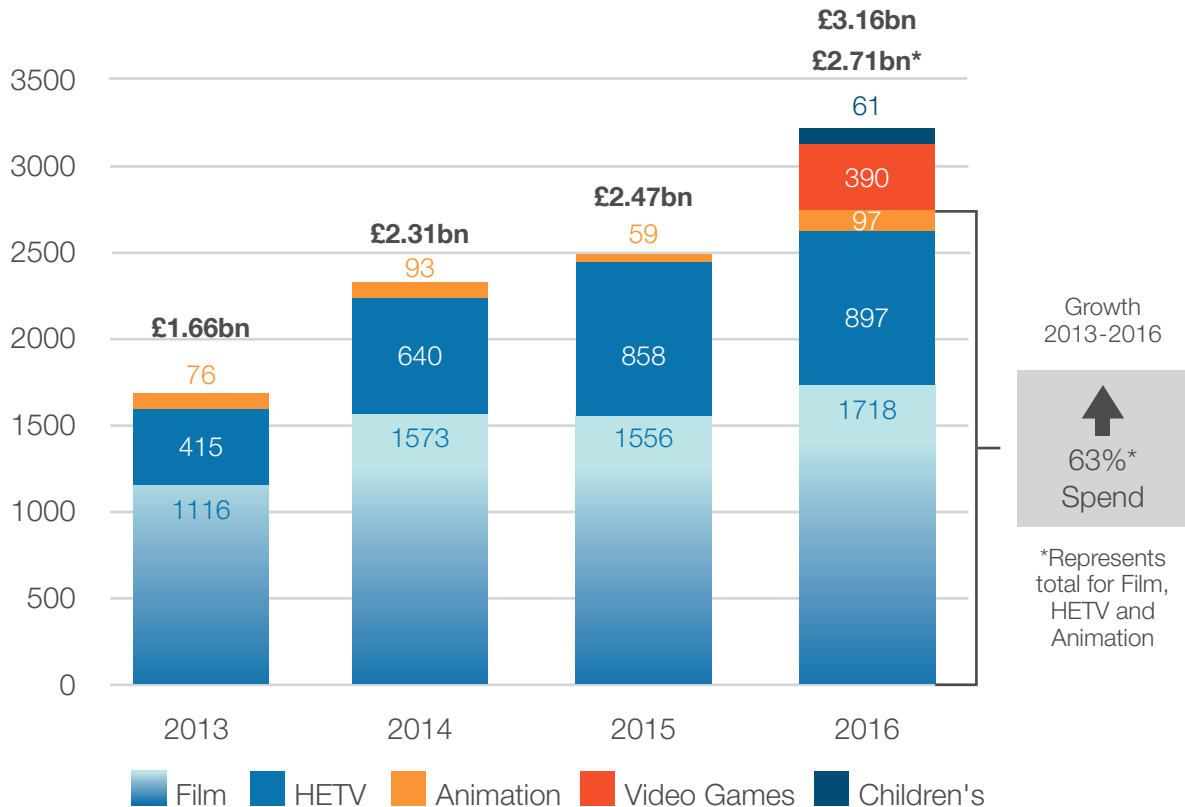
- Production supported by the UK screen sector tax reliefs, reached a record total of £3.16 billion in 2016. Film production represented 54% of this total, but there are strong contributions from HETV (28%) and video games (12%).
- The tax reliefs have encouraged consistent – and arguably sensational – growth, with a 63% increase in production investment in the last four years for the three sectors – film, HETV, and animation programmes – for which trend data is available.
- Since the introduction of film tax relief in 2007, UK production spend on film has increased to a new high of £1.72 billion in 2016, with an overall growth rate over the last four years of 47%.
- HETV production has also seen growth to £896.7 million in 2016, more than double the spend compared to the first year of the tax relief being operational (£415 million). The UK industry has leveraged the opportunity provided by the availability of the HETV to increase both the scale and volume of output including recent productions for Netflix and Amazon which have invested significant amounts in original UK content such as *The Crown* and *Outlander*.
- On a combined basis all five screen sectors attracted over £2 billion of inward investment from the US, EU and other markets in 2016, 66% of the total spend in 2016.<sup>3</sup>
- For film and high-end television, these increases in production investment have come both from repatriation of high-end television productions that would have been made elsewhere, in countries with tax relief structures, as well as inward investment from producers based outside the UK. Whilst the attraction of the UK is driven by its infrastructure, facilities, availability of skills, creative talent and diverse range of locations, the availability of the tax reliefs provides a competitive and targeted financial incentive.

<sup>3</sup>. For the HETV, ATR, VGTR and CTR sectors, statistics for inward investment also include UK co-productions.

- Domestic production in the film sector has also seen growth and at £298m in 2016 reached its highest recorded total, up 34% since 2013. With the repatriation factor, domestic HETV production supported by the tax reliefs has also grown, though at £342.6m, the data for 2016 is slightly below the high of £426.5m reported for the previous year.
- The VGTR had been operational only for one full year prior to the period covered by this study. Total development spend in the sector in 2016 was £1.25 billion, of which £389.9 million accessed tax relief. Inward investment is also a success story for the video games industry, and has accounted for around 27% of total spending on video games supported development since the tax relief was first introduced in 2014.
- The tax reliefs for animation and children’s programmes supported production of £97.1 million and £61.0 million respectively in 2016, and whilst these are smaller sectors, the tax reliefs underpin their future economic sustainability. Animation in particular, supports a wide variety of screen sector activity across film (supported by the FTR), visual effects and video games (supported by the VGTR). The introduction of tax relief for children’s television programme production has helped sustain a sector less proven commercially and which had been in decline prior to its introduction.

**Figure 1 Growth in production investment, 2013-2016**

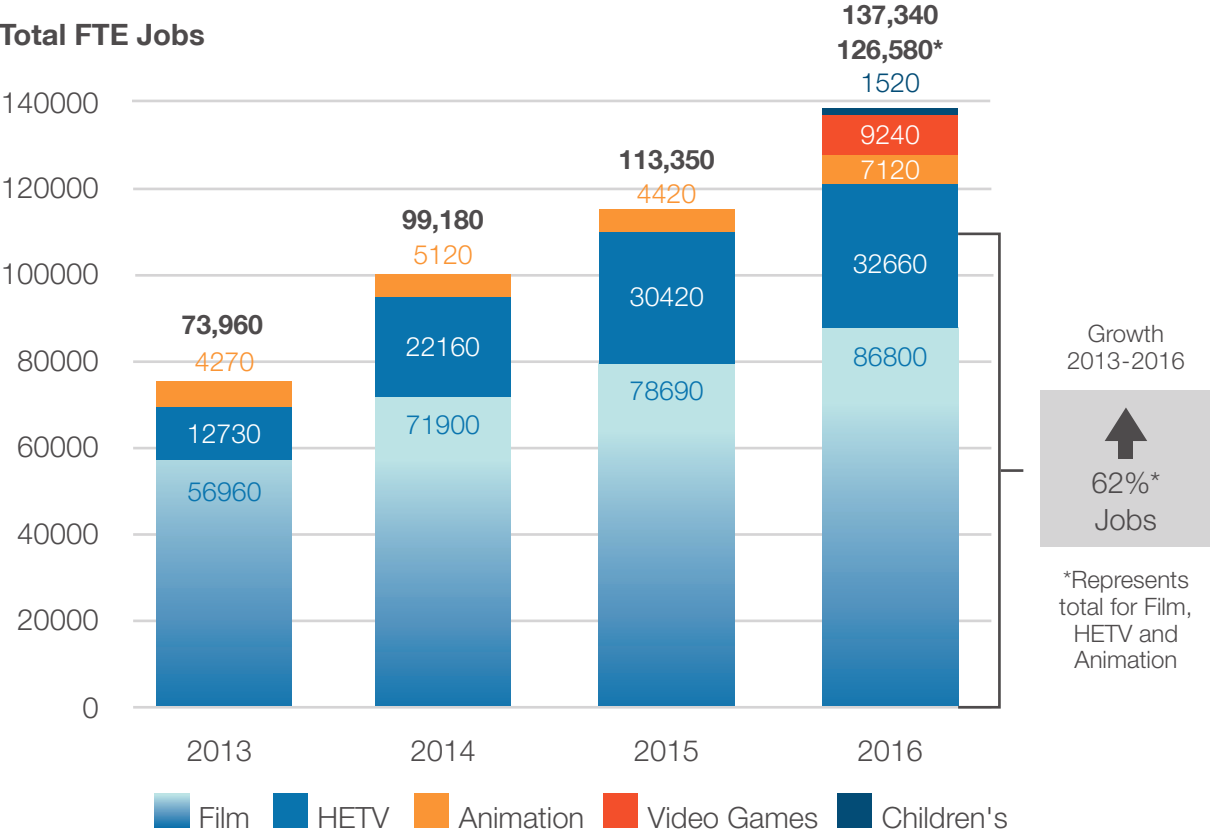
**Production/development spend £m**



## 2.2 Growth in jobs and employment

- Screen sector production supported by the tax reliefs in 2016 (i.e. including direct, indirect, induced and spillover impacts) generated a total of 137,340 Full Time Equivalent (FTE) jobs, of which 100,410 FTEs were in the screen sector value chains (i.e. from direct, indirect and induced impacts).
- There has been consistent growth in the employment opportunities offered by the tax relief supported screen sectors. For the three sectors – film, HETV and animation programmes – for which there is available trend data, employment (including direct, indirect and induced impacts) reached 126,580 FTE's in 2016, an increase of 62% since 2013.

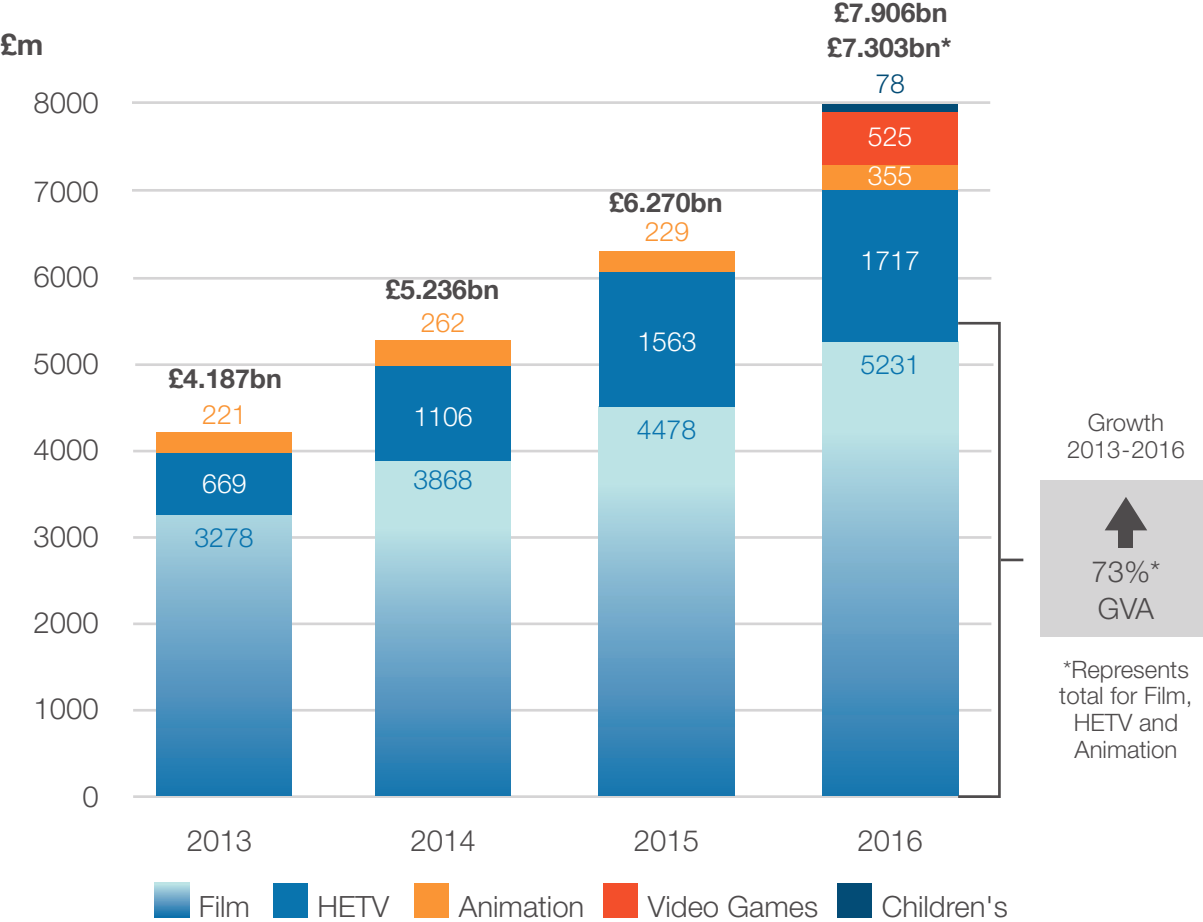
**Figure 2 Growth in employment – overall economic impact (direct, indirect, induced and spillover impacts) 2013-2016**



## 2.3 Growing the economy

- In 2016, taken together the tax relief supported screen sectors delivered a total of £7.91 billion in Gross Value Added (GVA) for the UK economy. Of this, £3.68 billion represents direct GVA; £2.63 billion comes from indirect and induced impacts (employment, labour compensation in the supply chain, and re-spending of employment income) and £1.59 billion comes from spillover impacts (inbound screen tourism, merchandise sales, UK brand promotion and exports).
- As with production spend, there is a strong growth story with overall GVA for the three sectors which had established tax reliefs between 2013 and 2016 (film, HETV and animation programmes) increasing by 73% from £4.19 billion to £7.30 billion.
- Together, production spend and its job creation led to the generation of major tax returns for HM Government, estimated for all tax relief screen sectors to be £2.04 billion in 2016 of which 50% was related to direct economic impact.
- Tax returns have also grown strongly over time. Total tax revenues for the three sectors which had tax reliefs between 2013 and 2016 grew by 67% from £1.11 billion to £1.86 billion during this four-year period.

**Figure 3 Growth in Gross Value Added - overall economic impact (direct, indirect, induced and spillover impacts) 2013-2016**





## 2.4 Delivering productivity

- In terms of productivity, the GVA-per-FTE generated across the tax relief supported screen sectors is higher than that for the economy as a whole. In 2016, average productivity per employee for the whole UK economy was £62,144, against an average for all the tax relief supported screen sectors of £75,600 per employee.
- Video games delivered the highest average productivity in 2016 at £83,804 per FTE. Visual effects, whilst not a sector with its own tax relief, also generates high productivity at £81,257 per FTE and delivered benefits across film, HETV, animation and children's programmes.

## 2.5 Delivering return on investment

- In terms of return on investment (RoI), in 2016 all of the screen sectors supported by tax reliefs returned a positive economic benefit. Due to its scale, this is highest for the film sector which returns £7.69 in GVA for every £1 of relief granted, an increase of 13% since 2009 and a new high for the industry.
- High-end television, video games and animation programmes returned £6.10, £4.00 and £4.44 in GVA respectively for every £1 of tax relief and even children's television – where the tax relief was introduced relatively recently in April 2015 to support production investment – returned £2.73 in GVA per £1 of tax relief in the first full year of operation.

**Table 1 Annual GVA RoI, 2009-2016**  
(using updated methodology applied to previous years' data)

Annual RoI (£)	2009	2010	2011	2012	2013	2014	2015	2016
Film	£6.81	£6.71	£6.96	£7.43	£7.18	£7.13	£7.39	£7.69
High End TV					£5.55	£5.73	£5.81	£6.10
Animation					£4.50	£4.44	£4.60	£4.44
Video Games								£4.00
Children's								£2.73

## 2.6 Supporting innovation

- Innovation in the screen sector has been part of the reason that required this study to use a refreshed economic model. Advances in digital technology have driven structural change and innovation in the production, distribution and consumption of film, TV and video games.
- Innovation is also driven by technology and the capability of visual effects to digitally create moving images that make the seemingly impossible, possible. For the first time, this study identifies the VFX sector separately, as a different way of evaluating the benefits of the screen sector tax reliefs, exemplified by UK based productions such as *Star Wars: The Force Awakens*, *Paddington* and *Gravity*.

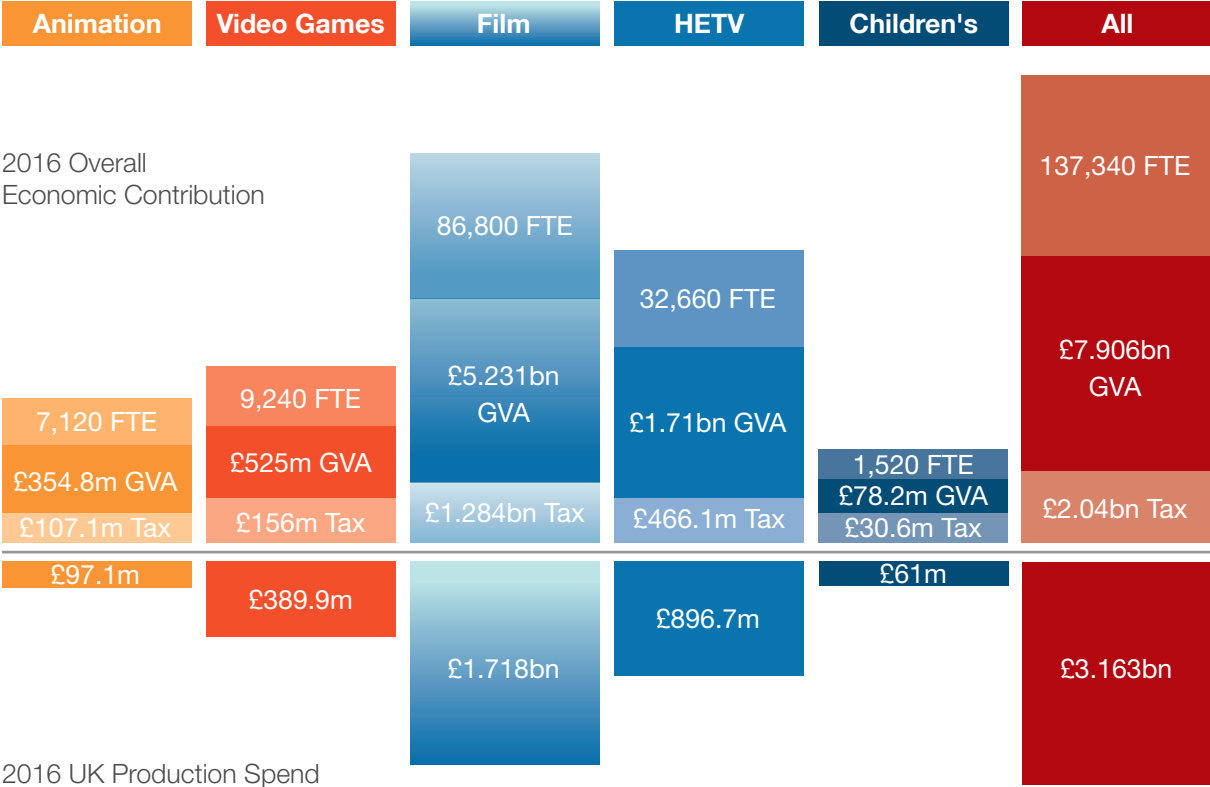
## 2.7 Growth in UK infrastructure and investment in the UK nations and regions

- Investor confidence in UK infrastructure and innovation – studios and facilities – has also been driven by the tax reliefs, with over £850 million publicly identified spend ongoing in the UK.
- Investment in facilities has spread from an established core in London and South East England to projects proposed around the UK and including new studio spaces such as Wolf near Cardiff, Pentland in Scotland, Church Fenton in Yorkshire and the Littlewoods building re-development project in Liverpool.
- In the video games sector, around £1.75 billion of corporate investment has been achieved since the introduction of the VGTR, which is spread across the country, reflecting the diverse locations in which UK video games companies are based.

## 2.8 Delivering wider elements of benefit

- Alongside the economic benefits, the tax reliefs deliver substantial talent and intellectual property (IP) benefits. Basing production in the UK, in HETV in particular, allows independent producers under the Terms of Trade to retain IP holdings in commissioned productions.
- Increased levels of indigenous production also contribute to a higher volume of recognisably British content being exported and available to audiences around the world. Not only does this originate from the adaptation of work by UK writers such as JK Rowling and Michael Bond but also from recognisably British characters such as James Bond, Dr Who and Horrid Henry.
- Spillover impacts – including merchandising, inbound tourism and UK brand promotion – are also part of the overall economic value delivered by the tax reliefs and are also significant in the revenues and jobs they generate. Spillover impacts generated just under 37,000 FTEs and delivered £1.59 billion GVA in 2016 from a range of productions from *Peppa Pig* to *Downton Abbey*.

**Figure 4 Overall Economic Impact of Tax Relief Supported Content including spillover impacts, 2016**



## 2.9 Key Findings by Sector

### 2.9.1 Film

- The 2007 introduction of FTR has stimulated steady growth in production expenditure in the UK reaching an all-time reported high of £1.72 billion in 2016.
- As a result of this production activity, the UK film sector is a substantial employer, directly generating 28,250 FTEs in 2016.<sup>4</sup>
- In 2016 the film industry directly contributed an estimated £2.46 billion to the UK's Gross Domestic Product in 2016, rising to £4.10 billion when indirect and induced impacts are also included.
- Including spillover impacts, in 2016, FTR-supported production generated an estimated 86,800 FTEs and £5.23 billion in GVA.
- FTR related expenditure can therefore be calculated to have delivered a return of £7.69 in GVA for each £1 in relief granted.<sup>5</sup> Compared with estimates derived for previous years, this also represents the highest RoI delivered by FTR since 2009 (the period covered in this report).

### 2.9.2 High-End Television

- Like film, growth in tax relief supported HETV production expenditure has also been consistent since the introduction of HETR in 2013.
- Recent growth is a result of increased inward investment, with UK production revenue generated from global content providers such as Netflix and Amazon Video as well as growth in domestic production spend by UK broadcasters.
- HETV production supported by HETR generated 13,090 direct FTEs in 2016 and total employment of 26,670 FTEs when indirect and induced impacts are included.
- Across the screen sector value chain, HETV production supported by HETR generated £1.45 billion in total GVA for the UK economy.
- Tourism is a strong element of spillover impacts for HETV productions generating an additional 5,990 FTEs and £267.8 million in GVA for the economy, and bringing the overall economic contribution of HETV to 32,660 FTEs and £1.72 billion in GVA.

<sup>4</sup>. Statistical Yearbook 2018, BFI (2018)

<sup>5</sup>. Full details of this calculation can be found in Section 4 and Appendix 3 of the full report

### 2.9.3 Video Games

- Tax relief for the video games industry was introduced in April 2014, with a focus on supporting the continuing creation of UK made and culturally-focused games. The impact of the tax relief is still in its infancy with a substantial amount of games development occurring outside of the tax reliefs.<sup>6</sup>
- Video games development supported by the VGTR generated £389.9 million of expenditure in 2016.<sup>7</sup>
- This element of the sector supported 4,640 direct FTEs and generated £294.1 million in direct GVA.
- When indirect, induced and spillover impacts are included, the VGTR-supported development generated an estimated 9,240 FTEs and £525.0 million in GVA.
- RoI shows a strong result of £4.00 GVA for each £1 of tax relief.

### 2.9.4 Animation

- The UK has a strong tradition of animation with programmes supported by the specific animation tax relief such as *Peppa Pig* and *Bob the Builder* as well as animated films which have access through FTR such as *The Jungle Book*, *Paddington* and *The Snowman*.<sup>8</sup>
- Production expenditure supported by the ATR reached an estimated £97.1 million in 2016 an increase of 27% since its introduction in 2013.
- ATR-supported the generation of 1,550 direct FTEs in 2016, rising to 2,810 FTEs with the addition of indirect and induced impacts. The addition of spillover impacts, namely merchandising, brought the overall employment impact to 7,120 FTEs.
- With the inclusion of indirect and induced impacts, the total economic impact of ATR supported programmes generated £163.3 million in GVA in 2016. With the inclusion of spillover impacts, this overall economic contribution was £354.8 million in GVA.
- Despite its size, the production of ATR-supported programmes yielded a strong RoI of £4.44 in GVA for every £1 of tax relief in 2016.

### 2.9.5 Children's television

- The challenge of creating high quality, culturally relevant children's television in a changing video ecosystem was recognised with the introduction of CTR in April 2015.
- In 2016, the only full year of operation of the relief covered by this report, CTR supported £61.0 million of production investment.
- This investment supported an estimated 800 direct FTEs and generated £41.1 million in direct GVA.<sup>9</sup>
- Including indirect and induced impacts these figures increase to 1,520 FTEs and a total of £78.2 million in GVA.
- Despite the size of this sector, CTR delivered a positive RoI in its first full year of operation, generating £2.73 of GVA for every £1 of tax relief.

<sup>6</sup> The wider impact of the video games sector is analysed in Appendix 1 of the full report

<sup>7</sup> As a different model is used to analyse VGTR compared to the other tax reliefs, no comparison to prior years is possible

<sup>8</sup> A full estimate of animation in the tax relief supported screen sectors as a whole is provided in Appendix 2 of the full report

<sup>9</sup> Note that the recent introduction of CTR means that it is too soon to provide an accurate estimate of spillover impacts for children's television

## 2.9.6 Visual Effects (VFX)<sup>1</sup>

- In 2016 total VFX spend on tax relief supported productions was estimated to total £275.4 million.
- These data estimate that VFX accounts for 13.0% of FTR related spend, 5.6% of HETR expenditure and 1.3% of ATR spend.
- In turn this production investment as a whole is estimated to have generated a total economic impact of 6,120 FTEs and £315.1 million GVA.
- Including the indirect and induced impacts across the value chain and spillover impacts deriving from this VFX work, the overall economic contribution of VFX within the tax reliefs in 2016 was 12,720 FTEs and £773.9 million in GVA.

## 2.10 Notes on Methodology

- The analysis uses a bespoke economic impact model developed for this study, reflecting current best practice in economic impact modelling, aligning the study with current government evaluation methodology (HM Treasury Green Book 2018) and replacing the use of a strictly multiplier based approach which was used in the previous 2015 study.
- The new approach enables the analysis to model how each pound of production or development spend or sub-sector revenue i.e. 'output', is used to acquire 'inputs' such as labour, capital investment or other suppliers. The input-output (I-O) approach ensures there is temporal consistency between production spend statistics and the economic contribution that this spend generates. It also ensures that input data are not double counted – a risk when multipliers are applied – and also that the base data is correctly validated.
- The estimates of FTE labour compensation and GVA generated by film and HETV production have been updated through the application of a separate 'Job Creation Model' commissioned by the BFI, and to be published Autumn 2018.
- Additionality – the amount of spend related to the tax reliefs which would not have happened in their absence – has been updated on the basis of new primary research undertaken for this study, and for some parts of the value chain, such as film exhibition, has been reduced, revised or removed following feedback from HM Government.
- For each sector, the value of the core components relate only to those generated by the screen sector reliefs and do not represent all content produced, licensed, sold, viewed or exhibited in the UK.

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<sup>1</sup>. As this represents a restatement of the above with a focus on VFX production, it should not be added to the figures quoted for the individual tax reliefs

## Key Economic Findings

		Tax relief-supported impact					
		FTR	HETR	VGTR <sup>5</sup>	ATR	CTR	Total
<b>Direct economic impact<sup>1</sup></b>	Employment (FTEs)	28,250	13,090	4,640	1,550	800	<b>48,330</b>
	GVA (£m)	2,458.5	783.0	294.1	100.7	41.1	<b>3,677.4</b>
	Taxation (£m)	619.7	236.2	106.3	35.7	22.5	<b>1,020.4</b>
<b>Total economic impact<sup>2</sup></b>	Employment (FTEs)	60,240	26,670	9,170	2,810	1,520	<b>100,410</b>
	GVA (£m)	4,098.8	1,449.4	522.1	163.3	78.2	<b>6,311.8</b>
	Taxation (£m)	967.8	381.9	155.2	48.4	30.6	<b>1,583.9</b>
<b>Overall economic contribution<sup>3</sup></b>	Employment (FTEs)	86,800	32,660	9,240	7,120	1,520	<b>137,340</b>
	GVA (£m)	5,231.0	1,717.2	525.0	354.8	78.2	<b>7,906.2</b>
	Taxation (£m)	1,283.6	466.1	156.0	107.1	30.6	<b>2,043.4</b>
<b>Return on investment<sup>4</sup></b>	Economic (GVA per £ of tax relief)	7.69	6.10	4.00	4.44	2.73	–
	FTEs per £m tax relief	150	127	70	85	55	–

### Notes:

1. Includes direct impact of production sub-sector and other value chain sub-sectors
2. Includes direct and multiplier impacts (i.e. indirect and induced impacts) for all value chain sub-sectors
3. Equal to sum of direct, indirect and induced impacts, and spillover impacts
4. Return on investment (RoI) data relate to returns per £ (GVA) or £m (FTEs) of tax relief granted; based on additional total economic impact + additional tourism spillovers
5. Full economic impact of the UK Video Games sector – including elements not applying or eligible for the VGTR – can be found in Appendix 1 of this report; this shows a total economic contribution, including spillovers, of 46,380 FTEs, with a GVA contribution of £2.82 billion

All data relate to 2016; GVA refers to gross value added; FTEs refers to full-time equivalent jobs; RoI not applicable for total column; no spillover impacts have been estimated for CTR due to a lack of data.

# Introduction

3



## 3.1 Background

The UK has a long and rich history of international success in the screen sectors. Its film sector has contributed many significant productions, including *The Third Man*, *The Red Shoes*, *Chariots of Fire*, *Paddington*, *The King's Speech* and *Trainspotting*. This legacy has been built on via franchises such as Harry Potter and Bond, recent films including *Star Wars: The Force Awakens*, and UK independent productions, such as *Lady Macbeth*.

High-end television (HETV) is a newer sector but it also builds on the UK's strong, long-term television production heritage. Since the introduction of High-End Television Tax Relief (HETR), this has been demonstrated by the success of productions such as *The Crown*, *War and Peace*, and *Outlander*. The animation programme sector also has a strong history, and in recent years has produced global hits such as *Peppa Pig*, *Postman Pat*, and *Fireman Sam*.

All of these content forms are supported by the VFX sector which, while not subject to a specific tax relief, is nonetheless a critical part of the UK's production sector.

The UK's video games sector also has a remarkable track record in the production of innovative content that can attain huge global success, building on a rich heritage of games production ranging from *Dizzy* and *Elite* to *Fable*, *Lemmings*, and *Little Big Planet*. In recent years, franchises such as *Grand Theft Auto*, *Football Manager*, and *Forza Horizon* have continued to go from strength to strength, including the world's largest-selling single entertainment product in *Grand Theft Auto V*, and exporting to a rapidly-expanding global market, estimated to be worth £103.9 billion (US\$137.9 billion) in 2018.<sup>10</sup>

## 3.2 Aims of the Study

This Study demonstrates the economic contribution of tax relief for the screen sectors. It expands on a previous study undertaken in 2015 by Olsberg•SPI with Nordicity – as outlined in Section 3.3 – to bring in the children's television sector in reflection of the new Children's Television Tax Relief (CTR), increasing the scope of the analyses of the video games and animation sectors, and considering VFX separately for the first time.

As such, the Study provides a comprehensive and fully updated analysis of the economic value generated by HM Treasury's ongoing support of the screen sectors. Its findings are of significant importance to policymakers and the screen sectors, as well as the wider UK public.

## 3.3 Study Scope and Objectives

In 2015, Olsberg•SPI with Nordicity were commissioned to conduct the study Economic Contribution of the UK's Film, High-End TV, Video Games, and Animation Programming Sectors (the 2015 Study). This was an update to a series of studies first conducted in 2005 by Oxford Economics for the then UK Film Council (UKFC) and Pinewood Group, which provided estimates of the total employment, GVA, and HM Treasury revenue generated by UK-made films. For the first time, the 2015 Study expanded this analysis to the then-new tax relief sectors: HETV, video games, and animation programmes.

<sup>10</sup>. 2018 Global Games Market Report, Newzoo

In doing this, the 2015 Study built on the methodology previously used, quantifying not only the direct and indirect impacts of content production or development, but also the trade and investment value generated, and spillover impacts including:

- Skills development;
- Screen tourism;
- Culture;
- Merchandise sales; and,
- Promotion of the UK brand.<sup>11</sup>

As with the 2015 Study, the current Study has evaluated the core UK component for each sector receiving the tax relief. This has been undertaken so that value has reflected only the economic contribution of UK-qualifying content, rather than all content sold, viewed, or exhibited in the UK. This model clearly links the value generated back to the tax reliefs provided by HM Government, providing an appropriate basis for the Return on Investment (RoI) calculation and cost-benefit analysis. See Section 3.6 for more detail on the tax reliefs and UK-qualifying projects.

A value chain approach has also been undertaken across the sectors in question, which enables the measurement not just of the economic activity stimulated by the development and production of content, but also its downstream impact on various distribution platforms. In the film sector, this analysis includes the traditional exhibition sub-sector, through physical and digital media, and the various forms of video-on-demand (VoD) and subscription video-on-demand (SVoD).

## 3.4 Differences from Previous Studies

This analysis includes a variety of changes from the 2015 Study, which are summarised in the following sections.

### 3.4.1 Revisions to the Economic Contribution Model

There have been several key changes made to the underlying economic contribution model so that the Study better reflects current economic best practice and the current structures of the sectors being analysed.

The key changes are:

- A multiplier approach is no longer used to estimate the indirect and induced impacts of activities within each of the sectors studied. The previous multiplier-based approach is now outdated and not reflective of the composition of the screen sectors. Instead, a bespoke economic impact model has been used, based on input-output tables published by the Office for National Statistics (ONS);
- The additionality value of the various tax reliefs has been revised, following primary research with the sectors in question; and,

<sup>11</sup> As noted by a previous SPI study: “The branding of a nation or region’s people, society and culture has a strong influence on tourist visit decisions. They also have positive impacts on citizens and residents who tend to experience a stronger ‘bonding’ to their nation or region from a positive experience from watching the film”. Film and the Creative Economy: How Film and Television Drama Productions Grow the Creative Industries, Olsberg•SPI (31st July, 2017)

- The estimates of full-time equivalent (FTE) jobs generated by film and HETV production have been revised, taking into account the findings of a separate piece of empirical research of job creation commissioned by the BFI.<sup>12</sup>

Further details of these revisions can be found in Appendix 4, and each section contains an overview of the changes made in the analysis of the sector described.

These revisions mean that the data contained in this Study are not comparable with previous analyses – consequently, time-series data have been provided for each sector analysed to enable comparisons with past performance.

### 3.4.2 Addressing non-Tax Relief Elements of the Sectors

In both the animation and video games sectors, this Study has also assessed non-tax relief elements for the first time – i.e. activities undertaken by those sectors which are not eligible for tax relief, or where content didn't apply for the available support. This reflects the ways in which both sectors deliver outside the bounds of their specific reliefs, and the under-counting owing to limited or incomplete data relating to the two sectors, which has occurred in previous studies.<sup>13</sup>

In the case of the animation sector, this has involved measuring animation-related spend that is supported through the other tax reliefs – in particular the Film Tax Relief (FTR) – through which much of the output of the UK animation sector is made. A small amount of animation production in the UK is not eligible for any tax relief – both this and FTR-supported animation production is valued in Appendix 2.

For the video games sector, the key challenge has been identifying the total value of a sector which is not entirely eligible for the Video Games Tax Relief (VGTR), reflecting use of the R&D tax relief for certain elements of development. Furthermore, various companies opt not to use the tax relief – anecdotal evidence suggests various reasons for this, including a perception that the process is complicated, a lack of awareness or confusion about the potential returns, misunderstandings of the qualifying criteria (i.e., a perception that games have to be “cultural”), and the industry's historic lack of reliance on incentives. This issue is explored in more detail in Section 6, and the wider analysis is presented in Appendix 1, but suggests the potential for greater impact in the future.

### 3.4.3 The Impact of VFX

As with the animation sector, this Study has also measured the value of total VFX spend in the UK, regardless of whether it was supported by tax relief or not – for the advertising sector, for example, which is not eligible for tax relief. This approach recognises VFX's increasingly critical part of the UK's screen production landscape.<sup>14</sup>

### 3.4.4 Productivity

While slow productivity growth is a critical question within the wider UK economy, the data to assess whether this impacts the screen sectors has not previously been available. This Study has therefore addressed the question of productivity in these sectors for the first time, providing stakeholders with a baseline for the future.

<sup>12</sup>. Due to be published Autumn 2018

<sup>13</sup>. This under-counting is demonstrated by this Study, having previously been only anecdotal in nature.

<sup>14</sup>. An analysis of the total value of the VFX sector in the UK, including non-Tax Relief elements, can be found in Appendix 3 of this Study

### 3.4.5 Children's Television

As with the 2015 Study, this analysis has also been expanded to include the impact of a newly-introduced tax reliefs – in this case the CTR. The approach used is the same as the revised methodology used for the other similar sectors: HETV and animation programmes.

## 3.5 Definitions of the Core UK Sectors

Most statistics on the UK screen sectors – whether from the ONS, the BFI, Department for Digital, Culture, Media & Sport (DCMS), Ofcom, or other agencies – quantify the total impact or value of the sectors they describe. These data do not consider country of origin – for example, the ONS' data on the cinema exhibition sector, including turnover, GVA, and employment, includes the screening of films originating from around the world, including the UK. This Study has focused on the economic contribution generated by UK-qualifying content – i.e., screen content which qualifies for the various UK tax reliefs.<sup>15</sup>

### 3.5.1 Film Sector

In the production sub-sector of the film value chain there is very little difference between the core UK component and the overall sub-sector overall. This is because only limited numbers of films produced in the UK are not UK-qualifying. At other points in the value chain the economic role of non-UK content becomes more significant.

In order to specifically analyse the contribution of UK content only within these sub-sectors, estimation methods have to be used to identify the contribution of core UK films within the distribution and exhibition sub-sectors. To achieve this, the market or audience share of UK-made productions in the cinema exhibition and video platform sub-sectors has been used to estimate the contribution attributable to the core UK film component from these parts of the value chain.

### 3.5.2 HETV

A similar approach has been taken for HETV, although the fact that HETV is part of a larger television market means that sector-wide statistics relating to the Television industry as a whole are less relevant than they are for film (where there is a strong correlation between FTR-supported production and the total industry). As a result, BFI's published statistics on HETR-supported expenditure in the UK have been used as the basis for estimating economic contribution. These were analysed using a separate piece of empirical research of job creation commissioned by the BFI from Nordicity and Olsberg•SPI.<sup>16</sup>

To specifically analyse the economic contribution of HETV in other parts of the value chain, including television broadcasting and other video platforms (such as Netflix and Amazon's Prime Video), estimates of employment and GVA that were linked to the contribution that HETV programming makes to UK broadcasters' revenue were developed.<sup>17</sup> As a result, the methodology was comparable to the approach applied to the film sector.

<sup>15</sup>. This model is slightly altered for the video games and animation sectors, where non-qualifying but UK content is considered

<sup>16</sup>. This study is due for publication in Autumn 2018

<sup>17</sup>. For further details on this approach, sections 5.3.2 and 5.3.4

### 3.5.3 Video Games

In analysing the impact of the UK video games sector as a whole, and the VGTR as a part of this, a company-based model of the UK video games sector was built. This used the Ukie's UK Games Map, specifically examining games development companies within this and acquiring granular data on the GVA and employment of individual companies within the sample.<sup>18</sup> VGTR spend was further separated from this using data from the BFI in order to analyse the tax relief within the context of the sector as a whole.<sup>19</sup>

In order to identify the impact of UK-developed games within the value chain, Ukie conducted an analysis of the market shares (in terms of units sold and revenue) accounted for by UK-made titles in the physical and digital consumer markets in 2016.<sup>20</sup> The results of this market-share analysis were used to apportion the economic activity within the domestic publishing and consumer sub-sectors to estimate the value of UK content through these.

### 3.5.4 Animation Programmes

As with HETV, analysis of the animation programme sector focused on programming that qualified for tax relief. The estimates of the economic contribution from the production of animation programmes was based on expenditure data published by the BFI.<sup>21</sup> A survey of animation companies was used to analyse the employment and GVA resulting from this spend.<sup>22</sup>

To specifically analyse the economic contribution of animation programmes in other areas of the value chain, including television broadcasting and other video platforms, estimates of employment and GVA linked to the audience share of productions in receipt of ATR were developed.<sup>23</sup>

As part of this Study a separate analysis has been undertaken of the wider animation sector (see Appendix 2). This analyses animation production within the other tax reliefs – particularly FTR – as well as non-tax relief animation, such as animation undertaken for advertising.

### 3.5.5 Children's Television Programmes

To measure the impact of children's television programmes, the model used for HETV was followed. Through this, production spend data published by the BFI were analysed using sector statistics on production spend and ONS input-output tables to generate direct impact data.<sup>24</sup> These data were then passed through the value chain, using estimates of employment and GVA linked to the audience share of the programmes in receipt of the tax relief.

<sup>18</sup> [gamesmap.uk](http://gamesmap.uk)

<sup>19</sup> These data were drawn from the Research and Statistics Unit release, British film, high-end television, animation television programmes, children's television programmes and video games certification, full year 2016, available at: [bfi.org.uk/sites/bfi.org.uk/files/downloads/bfi-british-film-other-screen-sector-certification-2016-2017-02-02.pdf](http://bfi.org.uk/sites/bfi.org.uk/files/downloads/bfi-british-film-other-screen-sector-certification-2016-2017-02-02.pdf)

<sup>20</sup> See Sections 6.3.2 to 6.3.4 for details on this

<sup>21</sup> Film, high-end television and animation programmes production in the UK: full-year 2017, BFI (31st January, 2018)

<sup>22</sup> This survey was sent to all companies in receipt of ATR in 2016, as well as selected animation production companies who did not apply for the tax relief, in consultation with the BFI and UK Screen Alliance

<sup>23</sup> Further details on this approach can be found in Sections 7.3.2 to 7.3.4

<sup>24</sup> For further details on this approach, see Section 8.3

## 3.6 UK Tax Reliefs, and the Definition of Qualifying Projects

In order to qualify for the UK's tax reliefs, projects are required to pass either a sector-specific cultural test, or to be certified as an official co-production through the use of one of the UK's bilateral co-production treaties or the European Convention on Cinematographic Co-production.<sup>25 26</sup>

Under the sector specific cultural tests, projects can apply for interim certification at any point during the production or development process – and can claim relief during production on costs incurred to date using the interim certificate – but either way a final certification application must be made following completion of the project.<sup>27</sup>

For productions using official co-production treaties, certification as a co-production is sufficient to access the tax relief without applying for the cultural test and an application must be submitted for an interim certificate at the pre-production stage. Non-treaty co-productions, however, are still required to apply for the cultural test.

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<sup>25</sup> Further details on the cultural tests can be found at: <http://www.bfi.org.uk/supporting-uk-film/british-certification-tax-relief>

<sup>26</sup> Not all co-production treaties allow television co-production; for further details on co-production treaties to which the UK is a party, and certification as an official co-production, please see: [bfi.org.uk/film-industry/british-certification-tax-relief/co-production](http://bfi.org.uk/film-industry/british-certification-tax-relief/co-production)

<sup>27</sup> In this case, 'development process' refers to development in the Video Games industry; 'development' as it occurs in the other screen sectors is not an eligible cost for the Tax Reliefs

### 3.7 The Areas of Economic Impacts

There are a variety of areas through which the production or development of screen content has an impact on the UK economy. In accordance with other economic contribution analyses, there are four key areas which have been applied to the screen sectors through this Study, as summarised in Table 2.<sup>28</sup>

**Table 2**  
**Summary of Areas of Economic Impact**

<b>Direct impact</b>	This refers to the economic activity (i.e. employment and GVA) generated directly within the particular screen sector. In the context of this Study, it refers to economic activity generated directly in the value chain. For example, it includes employment and wages earned at companies in the sub-sectors that comprise the screen sector value chains. This element of the analysis is conducted with reference to the core component of each screen sector, as outlined in Section 3.3.
<b>Indirect impact</b>	When companies in the screen sector value chain procure supplies and services from outside the value chain they generate an indirect economic impact. Procurement spending by screen sector companies raises income and employment in other sectors. For example, when the screen sector purchases accounting and legal services, it generates an indirect economic impact for these businesses.
<b>Induced impact</b>	The employment generated at both the direct and indirect impact stages raises these employees’ household income as they earn wages and salaries. And while these households will save part of their additional income, they will also spend it on goods and services in the UK. This spending and subsequent re-spending within the UK economy further increases economic activity across the broader economy.
<b>Spillover effects</b>	Some sectors can also have impacts beyond the supply chain. For the screen sectors the most notable, specific and discrete spillover effects are often in the form of tourism or merchandise sales. In the case of tourism, attractions, hotels and restaurants experience higher income and employment on account of tourism visits stimulated by the desire to visit filming locations or settings. In addition, broader impacts can also be generated by the outputs of the screen sectors, which can promote positive notions of UK culture and enhanced perceptions of the UK brand.

<sup>28</sup> See Economic Contribution of the UK’s Film, High-End TV, Video Game, and Animation Programming Sector, Olsberg•SPI with Nordicity (February 2015)



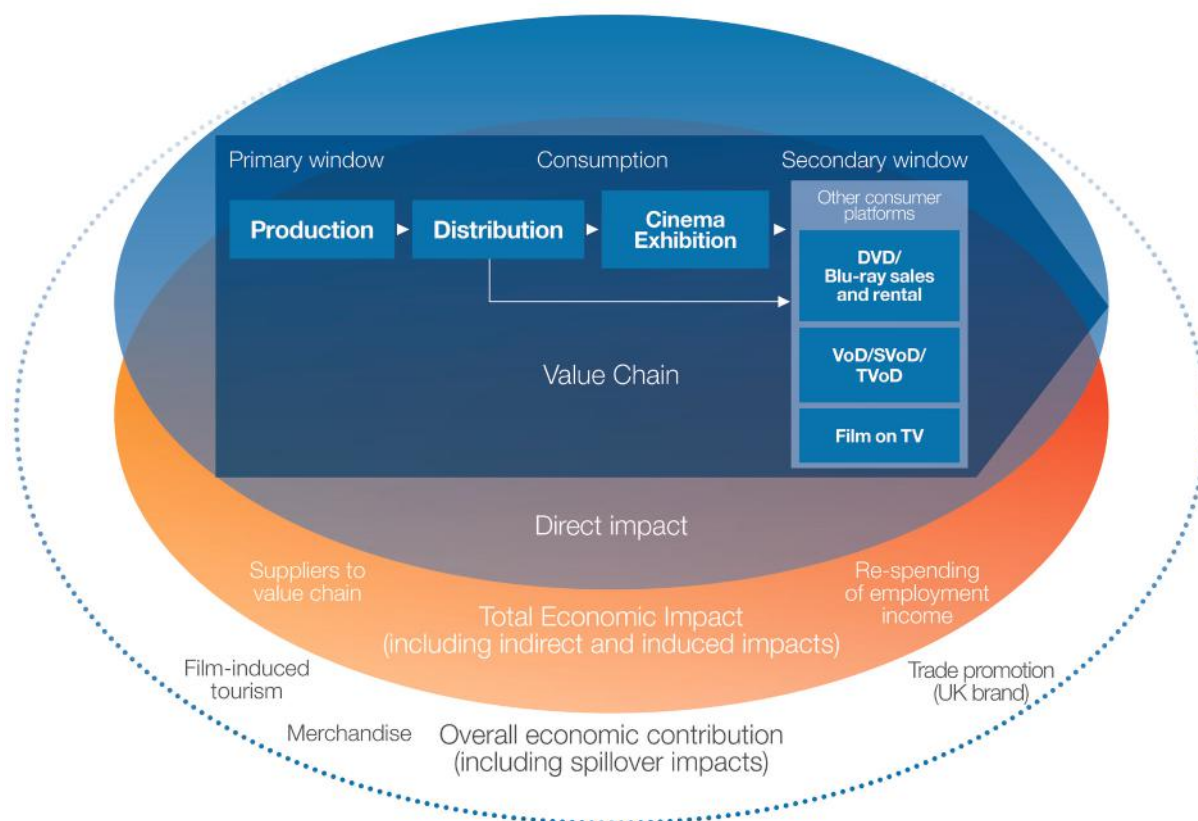
### 3.7.1 Framework for Economic Impact Analysis

The general framework for the economic contribution analysis has been based on the combination of a value chain approach, the separation of core UK screen content within this, and the analysis of the four key areas of economic impact. This has been applied in a comparable way to each of the sectors.

Figure 6 summarises this framework as it has been applied to the film sector. In this example, the direct impact represents the economic activity generated by companies operating in the value chain. In addition to the direct impact, estimates were also prepared for the indirect impact (i.e. the economic activity generated through purchases from suppliers to the value chain) and the induced impact (i.e. economic activity resulting from direct and indirect employees' re-spending of their income in the wider economy). This sum of the direct, indirect and induced impacts is total economic impact, as it is made up of the incremental income and employment impacts on both companies and individuals supplying inputs to the film sector value chain. This is the basis for the RoI and cost-benefit analyses for each of the tax relief programmes.

In addition to the total value chain impact, this Study has also investigated and – where possible – quantified the impact of spillover effects. These are the economic benefits received by businesses and individuals outside of the value chain, and act in addition to the direct, indirect and induced impacts. When included with the total value chain impact, these spillover effects form the overall economic contribution of the sector in question. As with previous studies, however, such spillover effects are not taken into account when undertaking the RoI and cost-benefit analysis.<sup>29</sup>

**Figure 5 Framework for Economic Impact Analysis (Film Sector Example)**



<sup>29</sup> There are two reasons for this. Firstly, in some cases, the approaches used to estimate the spillover effects are reliant on a longer chain of logic than those employed for direct and multiplier calculations. Secondly, such spillovers often cannot be attributed as cleanly as for the value chain impacts – for example, tourism decisions often have multiple stimuli





# The Film Sector

4

## Differences compared to the 2015 edition of this Study

Significant updates have been made to the methodology since the last edition of this analysis in 2015 (the 2015 Study), which was based on 2013 data. Since 2013, the FTR itself has also been revised, introducing a 25% flat rate for all productions and decreasing the minimum UK share of a production to 10% of the global budget.

This, and other previous editions, used multipliers derived through Cambridge Econometrics' 2005 economic contribution study. However, these are not reflective of the current screen sectors, having been calculated prior to the wide-scale implementation of modern digital production and distribution techniques.

An updated methodology has therefore been used – following discussions with HM Government – based on a bespoke economic impact model that utilises input-output tables published by the Office for National Statistics (ONS). This enables the analysis to trace how each pound of production expenditure, development expenditure or sub-sector revenue (i.e. “output”) is used to acquire inputs from labour, capital or supplier sectors. The methodology also utilises conclusions from an analysis of job creation within the screen sectors, separately undertaken by the consultants for the BFI (see Section 4.3.1), due to be published Autumn 2018.

As a consequence, the data in this Study are not comparable with those published in previous reports. Trend data from previous years has therefore been analysed using the current methodology and included to allow the reader to make such comparisons.

## 4.1 Context and Key Findings

Known for its world-class skills, talent, and infrastructure, the UK is well established as a major global international film production hub. Its output includes both high-budget projects backed by US studios, such as *Dunkirk* and *Transformers: The Last Knight* and independent UK productions that attract international attention, such as *Lady Macbeth* and *Their Finest*.

The introduction of the Film Tax Relief (FTR) in 2007 has underpinned significant increases in production expenditure in the UK film sector, rising from £850.9 million in 2007 to a new high of just under £1.72 billion in 2016.<sup>30</sup>

The core component of the UK film sector – i.e. UK-qualifying films – is a substantial employer, directly generating 28,250 full-time equivalent (FTE) jobs throughout all parts of the value chain, and directly contributing just under £2.46 billion to the UK's Gross Domestic Product (GDP) in 2016. The film sector generates a significant trade surplus for the UK and is highly export-driven.

With value chain, indirect, and induced spending, the total economic contribution for the core component of the UK film sector in 2016 amounted to £4.10 billion in GVA.<sup>31</sup> This economic activity supported 60,240 FTEs.

There are also significant spillover benefits of FTR to the UK economy, including attracting tourists and positioning the UK in the international market. Including tourism spillovers, FTR-related expenditure provides a return of £7.69 in GVA for each pound in relief granted.<sup>32</sup>

<sup>30</sup>. BFI Statistical Yearbook 2018, Screen Sector Certification and Production, p15. Total Film expenditure continued to increase in 2017, with a total of £2.00 billion

<sup>31</sup>. See Section 3.7 for an explanation of the areas of economic impact

<sup>32</sup>. This is not comparable with data from the 2015 Study, reflecting the use of an updated methodology

## 4.2 Value Chain Overview

The film sector is a complex and multi-faceted ecosystem, and in recent years has been undergoing a significant period of change due to the impact of modern technology, digitisation, and evolving financing models, which has impacted throughout all parts of the value chain. Technologies such as video-on-demand (VoD), which has radically altered value within the market, exemplify this. While such change has offered new revenue streams to content owners, in altering the nature of value it has made the financing of productions – particularly in the independent business – much more complex.<sup>33</sup>

In order to simplify this complexity, the traditional elements of production, distribution and exhibition have been used to assess the economics of the film sector (Figure 6). While not all films reach the market in this way, the majority will use this approach to reach consumers, and consequently it remains the most rational approach for this analysis; this is further underlined by FTR qualification requiring films to be intended for theatrical release.

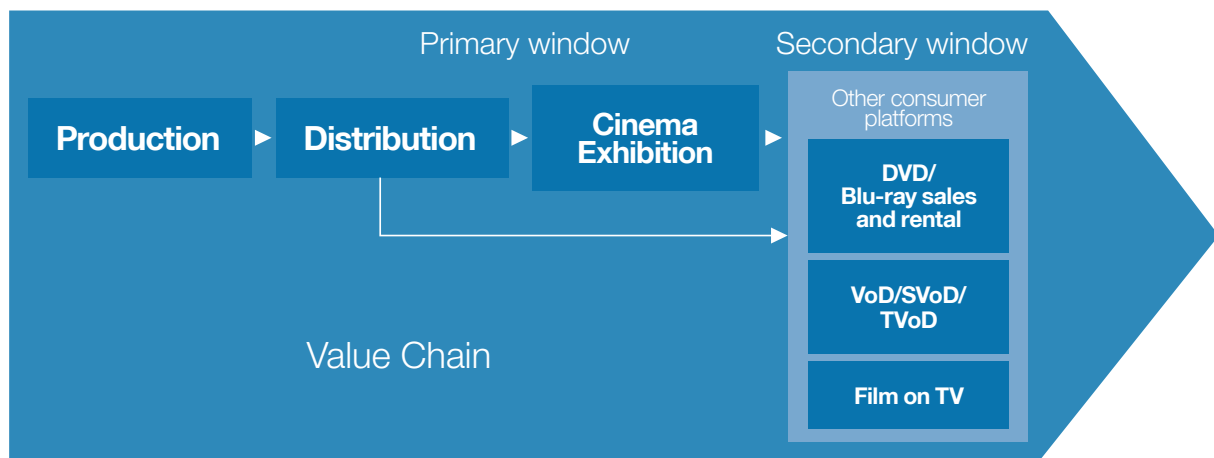
The value chain begins with production. In the context of this report, this includes pre-production, principal photography, visual effects (VFX) production, music, and audio and picture post-production and is the stage at which producers – from major global studios to small independent production companies – manage the conversion of the creative ideas of the screenwriter and director into a completed film.

This production stage is followed by international sales and distribution of a film. Distribution companies acquire the right to sell the intellectual property (IP) held by the production company, and plan how best to take this to market in the UK and overseas, including scheduling, advertising, and promotion.<sup>34</sup> In this stage of the process the distributor takes a significant financial risk on the production, with distributors generally managing the risk involved in the market through holding a portfolio of rights for the exploitation of different films. Sales agents will, in many cases, act as a bridge between the producer and distributor, taking an expert role in selling the product into the marketplace.

<sup>33</sup>. The State of the UK Independent Film Sector, Olsberg•SPI (2017)

<sup>34</sup>. In some cases, the distributor may also have been involved as a producer or investor at the production stage

**Figure 6**  
**Film Sector Value Chain**



Traditionally, films are initially released into the exhibition part of the market through cinemas. As a result of this, cinema exhibition is considered to be the primary release window. However, in recent decades, distributors have experimented with different release models, including straight-to-broadcast or straight-to-video/VoD. More recently, distributors have also adopted ‘day-and-date’ release strategies, through which films are released on multiple platforms – including theatrically, VoD, and television – simultaneously. This leverages the publicity which even a limited theatrical release provides for film releases, while allowing early access to windows like VoD, which are potentially much more profitable.

Within a traditional release model, the distributor will first exhibit a film in cinemas, before moving it onto secondary release windows, including DVD/Blu-ray sales and rentals, VoD, and television broadcast. However, as noted, these can now be the primary release window for certain productions.

Regardless of release strategy, analysing the full economic contribution of the FTR-related film sector has to take into account these platforms.

## 4.3 Direct Impact

This section of the Study assesses the direct impact of the core UK film sector throughout all parts of the value chain from production to exhibition.

### 4.3.1 Production

The production sub-sector is the largest economic contributor to the film value chain. Data on UK production spending, and an analysis of employment, labour compensation and gross value added (GVA) generated are outlined in this section.

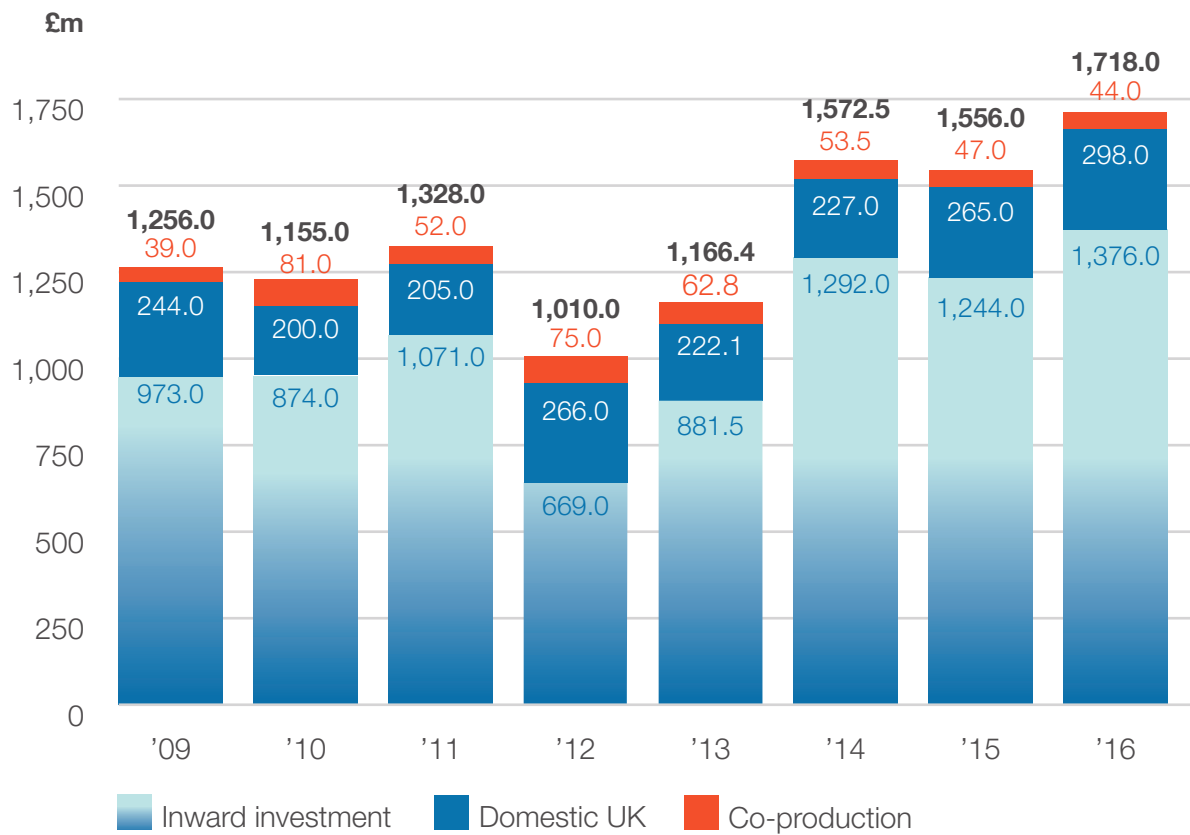
#### Expenditure

In 2016, expenditure on film production in the UK was £1.72 billion, of which £1.38 billion was inward investment spend.<sup>35</sup> At that point, this represented the highest production spend figure ever recorded, in terms of both current and real prices (Figure 7).<sup>36</sup>

<sup>35</sup>. Statistical Yearbook 2017. Ibid, p.197

<sup>36</sup>. Total film expenditure continued to increase in 2017, with a total of £1.91 billion. Film, high-end television and animation programmes production in the UK: full-year 2017, Ibid

**Figure 7**  
**UK Spend on Film Production, 2009-16 (£m)**



Source: BFI

The production of a film generally occurs over a period of several months, but BFI reporting practice assigns all expenditure for a film to the first day of principal photography. For this reason, it is important to note that annual time-series data on film expenditures are highly susceptible to spending being concentrated according to this date. This can result in significant fluctuations, which can distort year-on-year trends.

### Employment

Film production is a labour-intensive activity, with a cast and crew that can number hundreds of people, once pre-and post-production activities are included. This is exemplified by a production such as *The Jungle Book*, which had a crew of several hundred across its live-action, animation, and VFX elements.

To estimate the employment generated by film production, a Job Creation Model developed for the BFI as part of the study *Research into Job Creation through Production Investment*, was used (see box below for further detail). The Job Creation Model indicated that:

- Each million pounds spent on the production of inward investment films in the UK in 2016 led to 11.2 direct FTEs being hired; and
- Each million pounds spent on the production of domestic UK and UK co-production feature films in 2016 led to 12.9 direct FTEs being hired.

Both estimates of the rate of job creation in 2016 were adjusted on the basis of annual trends in median hourly earnings in the UK so that they could be used to also estimate job creation for the 2009-2015 period.

### About the Job Creation Model

In 2016, the BFI commissioned Nordicity and Olsberg•SPI through its Research and Statistics Fund to research the rate of job creation within the film and television production sector in the UK. The objective of this research was to prepare a set of formulae to estimate the total number of FTEs generated for each million pounds of production expenditure in various genres and budget ranges of live action film and television production. In addition, the consultancies developed a Job Creation Model specific to VFX production in the UK.

To develop the Job Creation Model, the consultants conducted a granular review of a cross-section of 25 production budgets to ascertain how production expenditures were distributed across various categories of labour and non-labour inputs (i.e. purchases of goods and services from other sectors), and how that spending translated into direct, indirect and induced employment.

Each budget line item was scrutinised and assigned to either labour or non-labour categories, and then mapped to an associated Standard Occupation Classification (SOC) or Standard Industrial Classification (SIC) code. The average FTE costs in the related SOC (adjusted for a film and television sector premium) or employment intensity in the related SIC was then used to estimate the number of direct or indirect FTEs generated by each million pounds of production expenditure.

The development of the Job Creation Model for VFX was not based on the same detailed budget approach adopted for live action production. Instead, the UK Screen Alliance screen workforce survey and a survey of five leading VFX studios was used to prepare estimates of direct, indirect and induced employment.

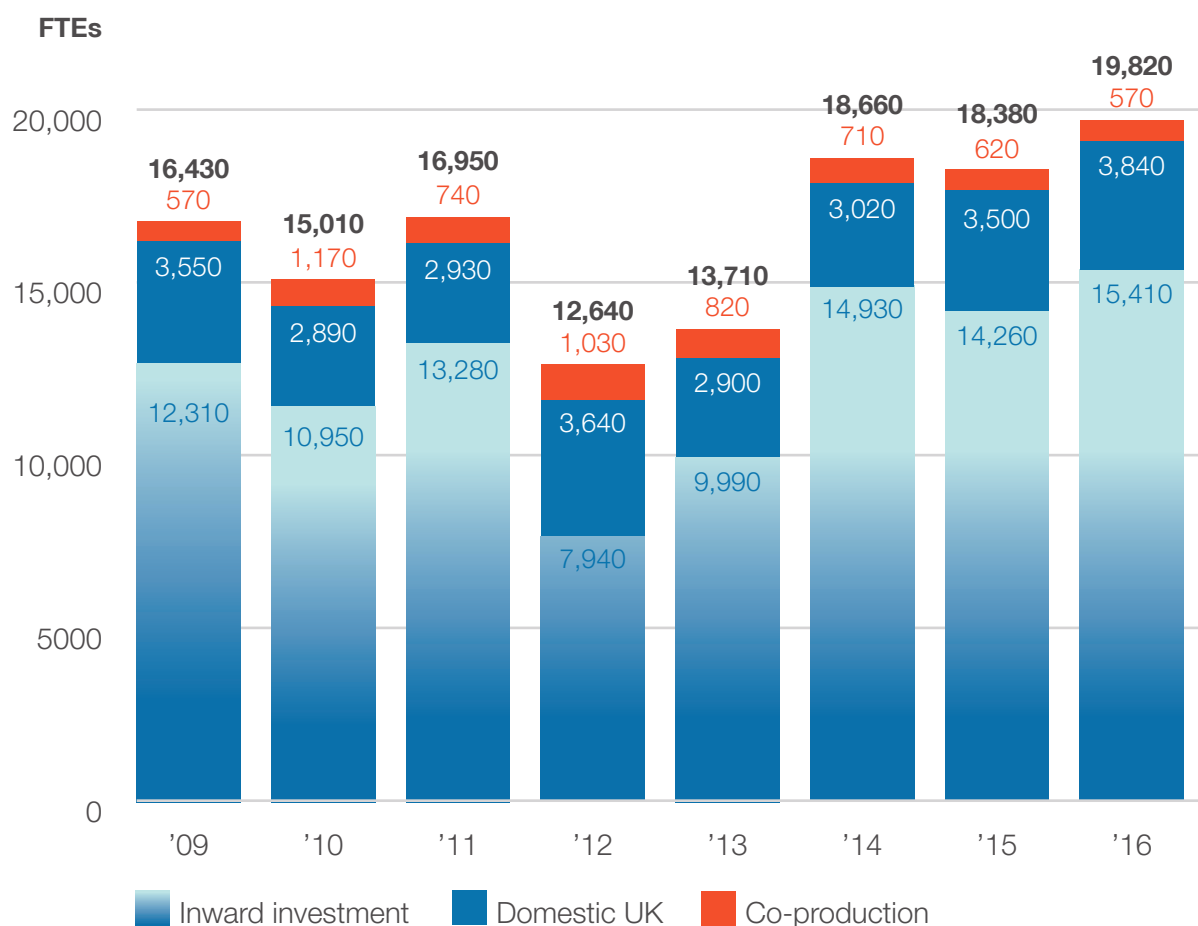
As a by-product of the development of the Job Creation Model, the consultancies and the BFI also gained insights into the portion of live action production budgets that were devoted to wages paid to crew and extras, i.e. labour compensation, and to mixed income, i.e. fees paid to producers, directors, cast and other key creative personnel; remuneration for intellectual property (IP). The combined portion of production budgets devoted to labour compensation and mixed income gave the consultancies and the BFI an indication of the GVA generated by production spending.

This data on labour compensation and GVA permitted the consultancies to estimate labour compensation and GVA ratios – i.e. the rates of labour compensation and GVA generated for each million pounds of production spending. The data gathered for the VFX sector allowed the consultancies to also estimate labour compensation and GVA ratios for VFX.<sup>37</sup>

<sup>37</sup>. This research will be separately published in Autumn 2018

Based on the Job Creation Model, film production in the UK generated 19,820 direct FTEs of employment in 2016 – including employees and freelancers (Figure 8). Of this total, 15,410 FTEs were generated by the production of inward investment films. The estimate of total direct employment in 2016 was the highest on record, and represented a small increase over the figure of 18,660 achieved in 2014.

**Figure 8**  
**Direct Employment Generated by Film Production in the UK, 2009-16 (FTEs)**



Source: Nordicity/Olsberg+SPI estimates based on data from BFI, ABS and ASHE

### Labour compensation and GVA

In addition to the employment impact, film production also generates significant levels of GVA for the UK economy. This GVA is largely comprised of the labour compensation paid to crew and extras, however, it also includes the fees paid to key creative personnel (e.g. producers, directors, screenwriters, actors) for licensing the use of the IP on which the production is based. This component of GVA is defined as mixed income. Other key elements of GVA (i.e. depreciation and operating surplus) are less relevant to film production, per se, and may be recognised in other parts of the value chain.

The Job Creation Model indicated that:



- Each million pounds spent on the production of inward investment films in the UK in 2016 generated £0.44 million in direct labour compensation and £0.53 million in direct GVA.
- Each million pounds spent on the production of domestic UK and UK co-production feature films in 2016 generated £0.47 million in direct labour compensation and £0.63 million in direct GVA.

Based on these labour-compensation and GVA ratios, it can be calculated that film production in 2016 generated £766.2 million in direct labour compensation and £947.1 million in direct GVA in 2016 (Table 3). Of these totals, inward investment films accounted for £604.1 million in labour compensation and £730.7 million in direct GVA.

**Table 3**  
**Direct Economic Impact of Film Production in the UK, 2016**

	Inward production	Domestic + co-production	Total
UK spend (£m)	1,376.0	342.2	1,718.2
Employment (FTEs)	15,410	4,410	19,820
Labour compensation (£m)	604.1	162.1	766.2
GVA (£m)	730.7	216.5	947.1

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, ABS and ASHE

### 4.3.2 Distribution

The distribution of films also provides a significant source of activity for the UK economy, as UK-domiciled distribution firms earn licensing revenue from the various release windows and platforms through which the finished content is shown – i.e. cinema exhibition, physical video, digital video (e.g. VoD), and television broadcast.

Reflecting the fact that the distribution sub-sector earns revenues from both UK and non-UK films, the portion of its revenues which relate to core UK productions were specifically analysed by multiplying overall turnover, employment and economic activity in the sub-sector (i.e. SIC 59.13/1 Motion picture distribution activities) by the three-year historical average for UK films' share of the UK box office (Figure 9).<sup>38</sup>

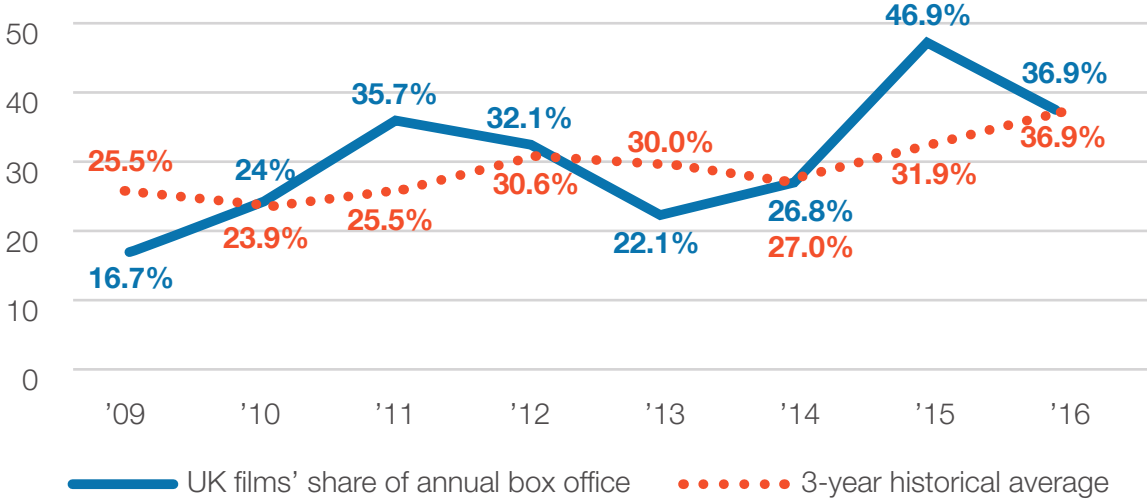
The use of the historical three-year average enables the analysis to account for the fact that distribution companies earn revenues from multiple production years and smooth out the year-to-year fluctuations in UK film's box office share, which accompanies release of major UK franchises, such as Bond and other blockbuster films made in the UK.<sup>39</sup> In order to account for that fact and to minimise the impact of such production spikes, the three-year historical average of the UK box office share has been used. For 2016, the use of the three-year historical average indicated that UK films accounted for 36.9% of economic activity in the distribution sub-sector.<sup>40</sup>

<sup>38</sup> The three-year historical average is the mean of the annual box office share in the most recent three years. For example, for 2016, the three-year historical average is the mean of the box office for UK films in 2014, 2015 and 2016

<sup>39</sup> There have also been certain anomalies in the time series statistics published by ONS for SIC 59.13/1. For further details of these anomalies, please see BFI Statistical Yearbook 2006, p. 256

<sup>40</sup> Coincidentally, the three-year historical average in 2016 (36.9%) was equal to the annual box share in 2016 (36.9%)

**Figure 9**  
**UK Films' Share of Domestic Box Office,**  
**Annual and Three-year Historical Average, 2009-16**

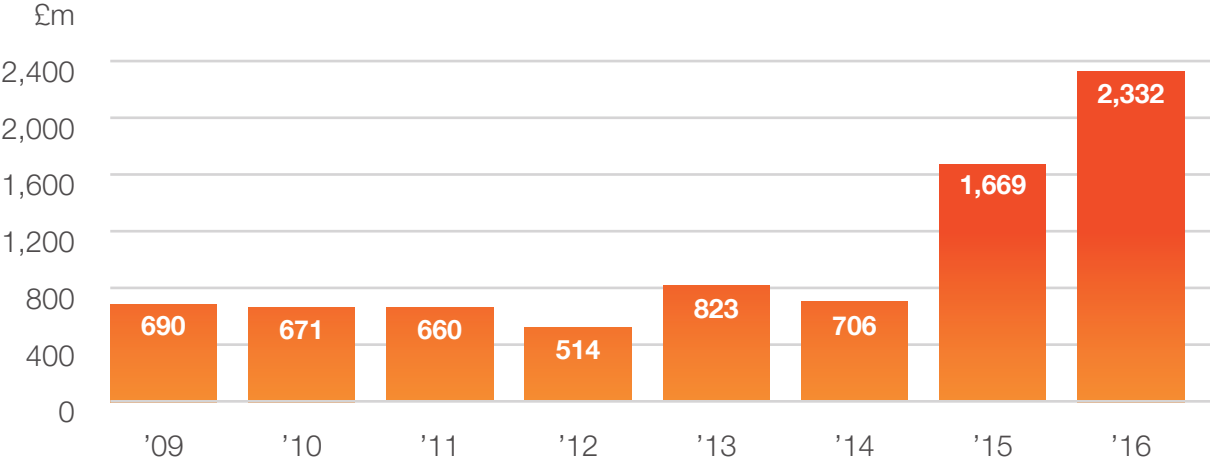


Source: Olsberg•SPI/Nordicity calculations based on data from comScore and BFI

The three-year historical average was multiplied by the annual revenue in SIC 59.13/1 Motion picture distribution to estimate the portion of distribution sub-sector revenue generated by UK films. Based on this approach, UK films generated an estimated £2.33 billion in distribution revenue in 2016.

In fact, between 2014 and 2016, the distribution revenue generated by UK films more than tripled. This rapid growth in revenue was due to two factors. First, the box office share of UK films increased during this period, thus raising UK films' economic share of total revenue in the UK's film distribution. Second, and more importantly, the underlying revenue in the UK film distribution sub-sector increased by 242% during this period. According to the ONS, this rapid increase in sub-sector revenue was due to several UK distribution companies experiencing increased revenue in 2015 and 2016 on account of new and popular film releases during these years.

**Figure 10**  
**UK Film Distribution Sub-sector Revenue Generated by UK Films, 2009-16 (£m)**



Source: Olsberg•SPI/Nordicity estimates based on data from BFI, comScore, and ABS

To estimate the economic impact in the distribution sub-sector associated with the distribution of UK films, the three year historical average in UK films' box office share (36.9%) was multiplied by the sub-sectors total turnover, FTE employment, labour compensation and GVA (Table 4). Based on this approach, the distribution of UK films generated an estimated £2.33 billion in turnover, 1,760 FTEs of direct employment, £139.4 million in direct labour compensation and £1.11 billion in direct GVA in 2016.

**Table 4**  
**Calculation of Direct Economic Impact of Distribution of UK Films in the UK, 2016**

	Sub-sector total (A)	UK films' box office share (B)	UK films' contribution (C=AxB)
Turnover (£m) <sup>1</sup>	6,325.0	36.9%	2,332
Employment (FTEs) <sup>2</sup>	4,785	36.9%	1,760
Labour compensation (£m) <sup>1</sup>	379.0	36.9%	139.4
GVA (£m) <sup>1</sup>	2,980.0	36.9%	1,107.1

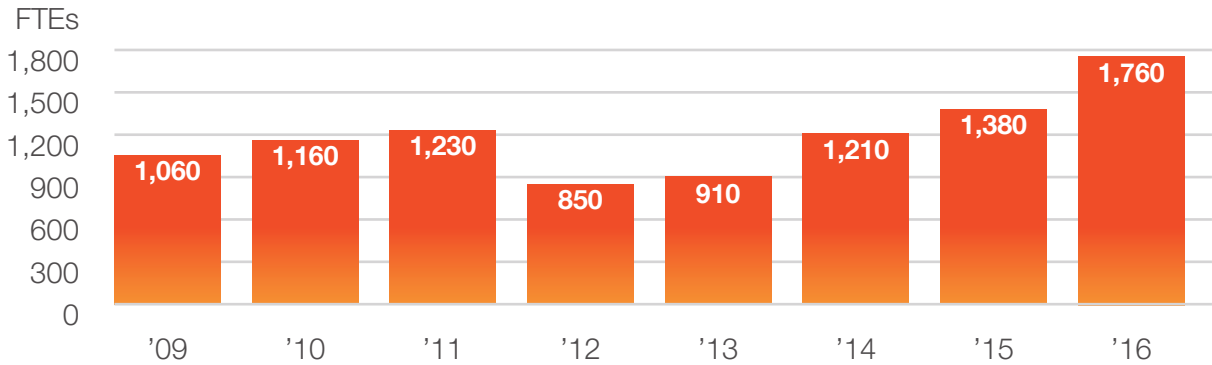
Source: Olsberg•SPI/Nordicity estimates based on data from BFI, ABS, IDBR, and ASHE

Notes:

1. Total turnover, labour compensation and GVA data for SIC 59.13/1 Motion picture distribution activities sourced from ABS
2. Total FTE employment derived by multiplying total employment in SIC 59.13/1 of 5,071 (sourced from IDBR/BRES) by FTE adjustment factor of 0.944.

These time-series data (Figure 11) indicate that there has been a steady growth of employment relating to the distribution of UK films since 2012. This reflects a steady growth in the share of UK films at the UK box office, and the growth of FTE employment within UK distribution companies over the period from 2012.

**Figure 11**  
**UK Film Distribution Sub-sector Employment Generated by UK Films, 2009-16 (FTEs)**



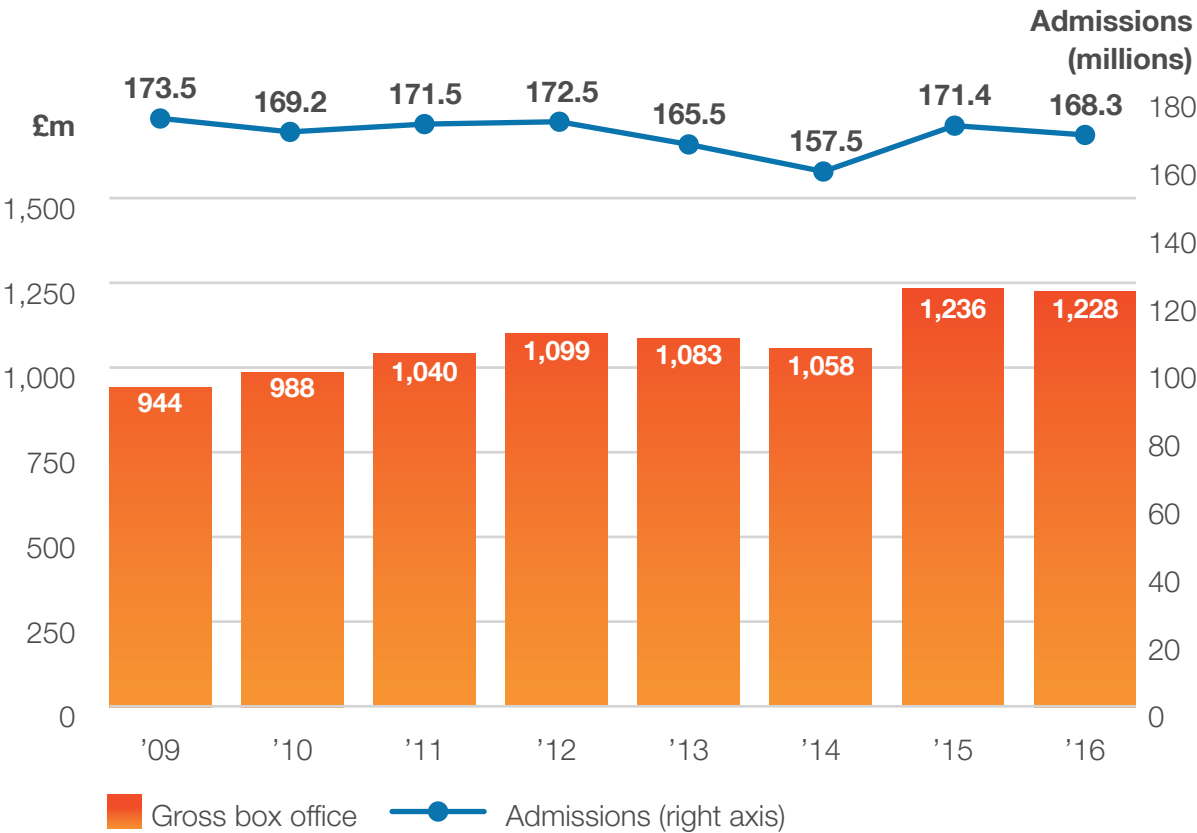
Source: Olsberg•SPI/Nordicity estimates based on data from BFI, comScore, ABS, IDBR and BRES

### 4.3.3 Cinema Exhibition

Historically, the majority of films were released on a commercial basis in cinemas. While the theatrical release window now accounts for a smaller part of the overall revenue for an individual film due to the growth of other windows such as video-on-demand, it still generates significant turnover, employment and GVA.

As of 2016, there were 4,150 cinema screens at 766 sites across the UK.<sup>41</sup> These cinemas sold a total of 168.3 million tickets in 2016, generating just under £1.25 billion in gross box office; theatrically-screened films accounted for £1.23 billion of this gross box office.<sup>42</sup> Cinema exhibition now also includes a variety of content in addition to film, such as live or filmed events including sports and theatre. This programming is described as event cinema.

**Figure 12**  
Cinema Box Office and Admissions in the UK, 2009-16



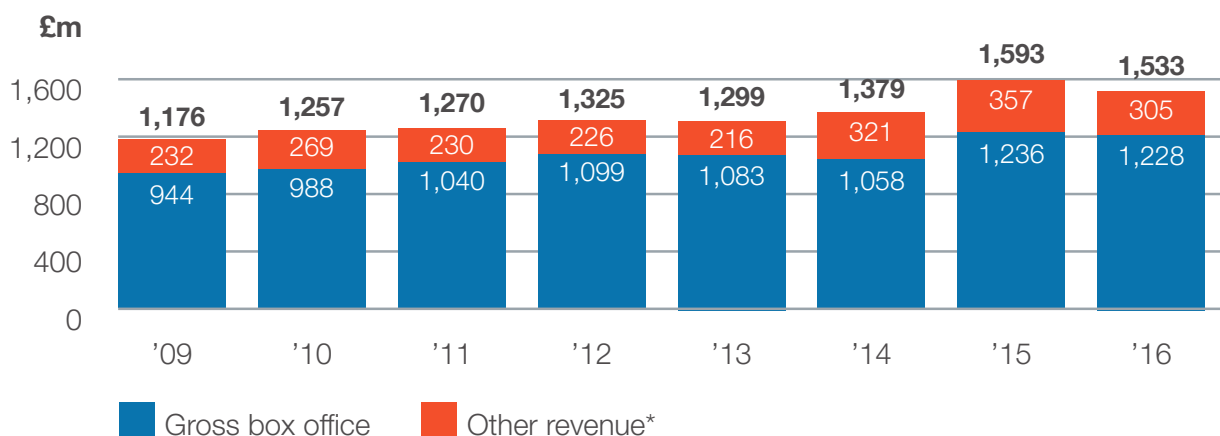
Source: Olsberg•SPI/Nordicity calculations based on data from comScore

In addition to the box office revenue from films, the UK exhibition sub-sector also earns revenue from food and beverage sales, advertising and other sources. In 2016, the UK exhibition sub-sector earned an estimated £305.0 million from these other sources (Figure 13).

<sup>41</sup> Statistical Yearbook 2017 (Exhibition). Ibid, pp. 3-4

<sup>42</sup> These cinema admissions figures include admissions to films as well as event cinema, such as live theatre and sports events screened in cinemas. The statistics for gross box office include only films

**Figure 13**  
**Total Turnover in the Exhibition Sub-sector in the UK, 2009-16 (£m)**



Source: Olsberg•SPI/Nordicity estimates based on data from BFI, CAA, ComScore, and Annual Business Survey  
 \* Includes estimates of revenue from food and beverage sales, advertising and other sources. Equal to the difference between total sub-sector turnover (as reported by ABS) and total box office revenue (as reported by the BFI)

UK film's annual share of the UK box office (Figure 9) – rather than the three-year historical average, as used for the distribution sub-sector – was multiplied by the sub-sector's total turnover, employment, labour compensation and GVA to estimate the portion attributable to UK films (Table 5). Based on this approach, the exhibition of UK films generated an estimated £565.5 million in turnover, 4,720 FTEs of employment, £96.3 million in labour compensation and £223.2 million in GVA in 2016.

**Table 5**  
**Calculation of Direct Economic Impact of Exhibition of UK Films in the UK, 2016**

	Sub-sector total (A)	UK films' box office share (B)	UK films' contribution (C=AxB)
Turnover (£m) <sup>1</sup>	1,533.0	36.9%	565.5
Employment (FTEs) <sup>2</sup>	12,780	36.9%	4,720
Labour compensation (£m) <sup>3</sup>	260.0	36.9%	96.3
GVA (£m) <sup>3</sup>	609.0	36.9%	223.2

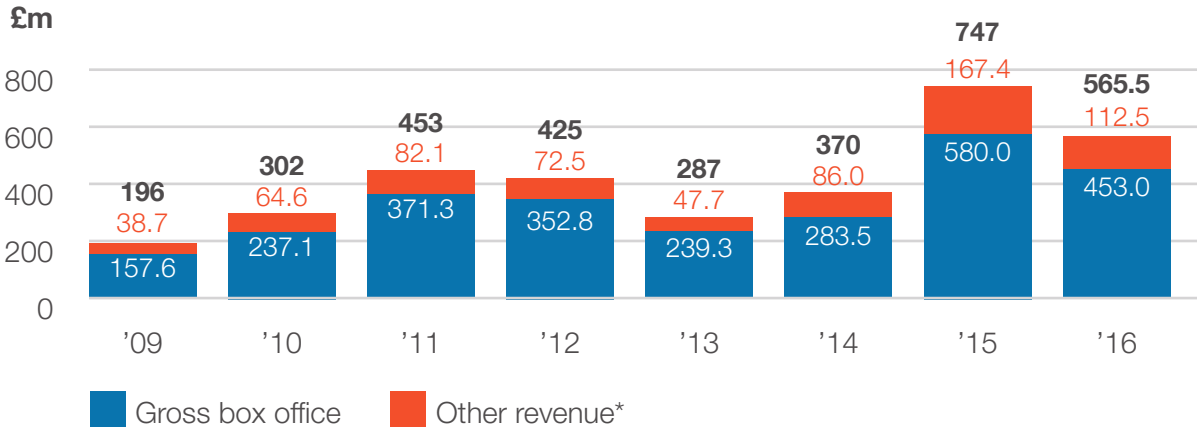
Source: Olsberg•SPI/Nordicity estimates based on data from BFI, ABS, IDBR, and ASHE

Notes:

1. Total turnover for SIC 59.14 Motion picture projection sourced from ABS. Includes box office revenue and estimates of revenue from food and beverage sales, advertising and other sources
2. Total FTE employment derived by multiplying total employment in SIC 59.14 of 20,420 (sourced from IDBR/BRES) by FTE adjustment factor of 0.626
3. Total labour compensation and GVA data for SIC 59.14 Motion picture projection sourced from ABS

This analysis shows that, in 2016, the exhibition sub-sector's turnover related to UK films was £565.5 million, including £453.0 million in box office revenue and £112.5 million in other revenue (Figure 14).

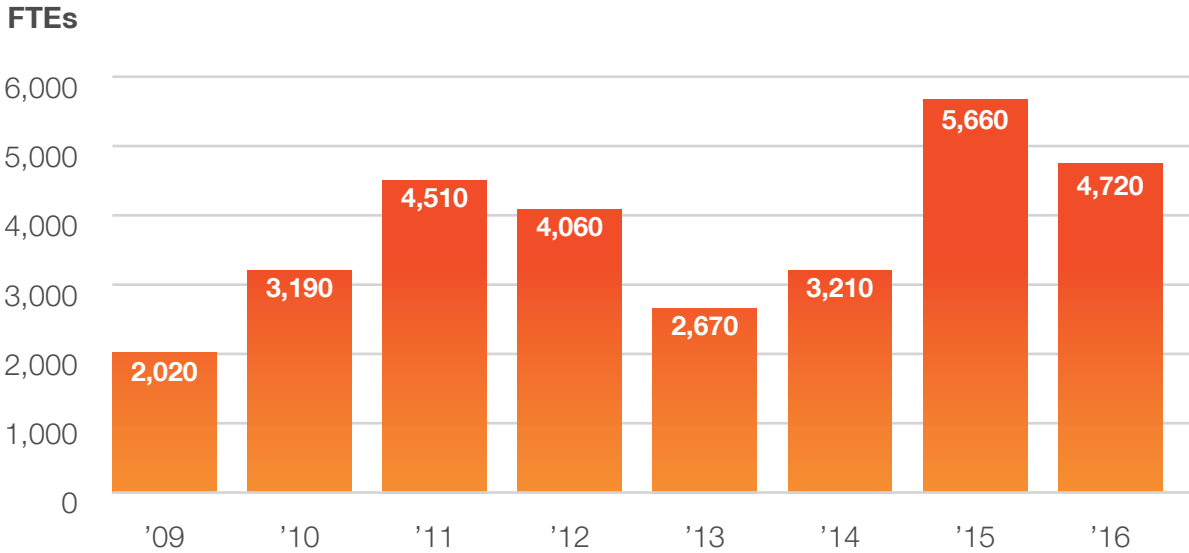
**Figure 14**  
**Exhibition Sub-sector Revenue Generated in the UK by UK Films, 2009-16 (£m)**



Source: Olsberg•SPI/Nordicity estimates based on data from BFI, CAA, ComScore, and Annual Business Survey  
 \* Includes estimates of revenue from food and beverage sales, advertising and other sources. Equal to UK films' box office share in 2016 (36.9%) multiplied by the total value of other revenue in the UK exhibition sub-sector (£305m)

The direct employment generated by UK films decreased by just under 1,000 FTEs in 2016 to 4,720, after reaching an eight-year high of 5,660 FTEs in 2015 (Figure 15). This reflected a lower box office share for UK films in 2016 compared to 2015, decreasing the share of the exhibition sector to be apportioned to the FTR value chain.

**Figure 15**  
**Direct Employment in the UK Exhibition Sub-sector generated by UK Films, 2009-16 (FTEs)**



Source: Olsberg•SPI/Nordicity estimates based on data from BFI, CAA, ComScore, and ABS, IDBR and BRES

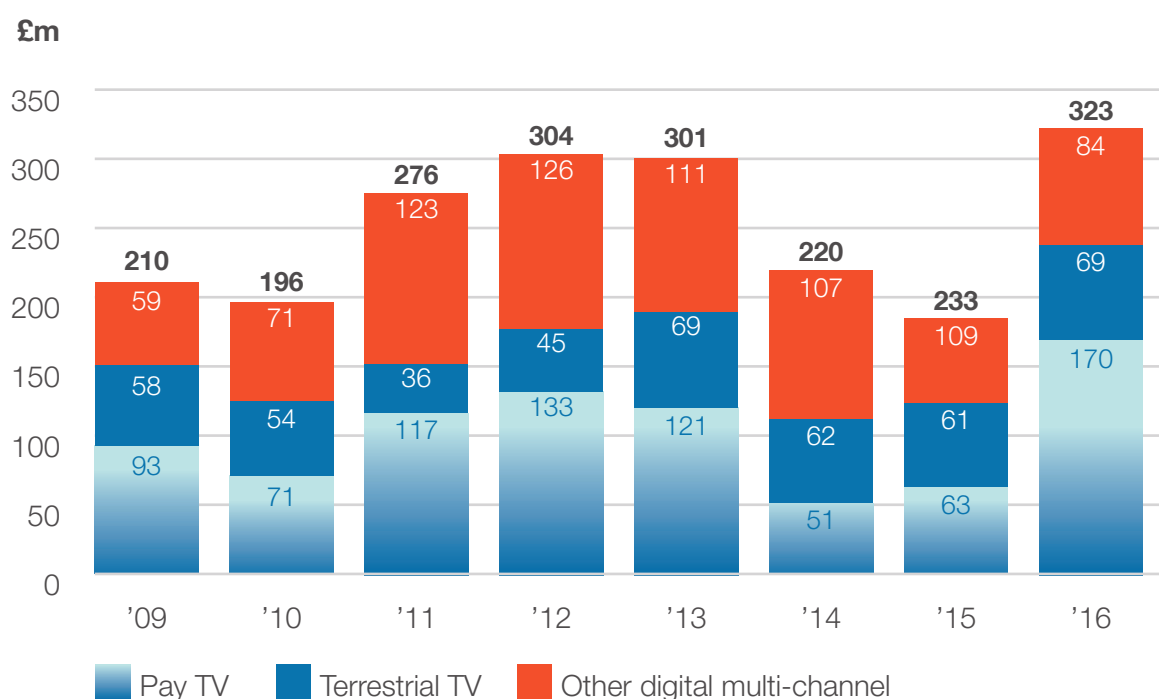
### 4.3.4 Secondary Windows

As previously outlined, secondary release windows include television broadcast, DVD/Blu-ray sales and rentals, and VoD. These are analysed in this section.

#### Television Broadcast

Films continue to generate economic activity as they are licensed to secondary-release windows, including television broadcast on free-to-air and subscription channels. This has always been an important secondary release window – and occasionally a primary release mode – for core UK films. In 2016, this window generated £323.0 million of value, the majority of which came from pay TV services (Figure 16).

**Figure 16**  
Value of UK Films on UK Television, 2009-16 (£m)



Source: Attentional, IHS, BFI RSU analysis (BFI Statistical Yearbook 2017, p. 165, Table 14.1)  
Note: For additional description of calculation methodology, see BFI Statistical Yearbook 2017, p.165

To estimate the economic contribution generated by film in the television broadcast sub-sector, the ratio of labour compensation to total turnover (the labour compensation ratio) and the ratio of GVA to total turnover (the GVA ratio) were derived from Annual Business Survey (ABS) data for SIC 60.2 Television programming and broadcast activities. The ABS indicated that the labour compensation ratio for SIC 60.2 was 0.11 between 2008 and 2016; the GVA ratio was 0.36.<sup>43</sup> These ratios were applied to data on the value of UK films on UK television, published by BFI.

<sup>43</sup> See Appendix 4, Section 14.1.1 for detailed description of derivation of the labour compensation and GVA ratios

The employment impact was estimated by dividing the estimated labour compensation (derived using the labour compensation ratio) by an average FTE cost of £48,565.<sup>44</sup>

Based on the labour compensation and GVA ratios, and average FTE costs, the £323.0 million in television broadcast sub-sector revenue attributable to UK films generated 730 FTEs of direct employment (Table 6). This represents the individuals at the various services which show UK films on UK television who are engaged in the process of delivering this content onto television screens.

This means that the advertising, subscription, licence fee and other income generated by UK films supported 1.8% of the total employment (of 41,540 FTEs) in SIC 60.2 in 2016, for a total 730 FTEs.<sup>45</sup> This attributable revenue also generated £35.5 million in direct labour compensation and £116.3 million in direct GVA.

**Table 6**  
**Direct Economic Impact of UK Films Broadcast on UK Television, 2016**

	Amount
Attributable revenue (£m)	323.0
Employment (FTEs) <sup>1</sup>	730
Labour compensation (£m) <sup>2</sup>	35.5
GVA (£m) <sup>3</sup>	116.3

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE

Notes:

1. Equal to labour compensation (£35.5m) ÷ average FTE cost in SIC 60.2 (£48,565)
2. Equal to attributable revenue (£322m) x labour compensation ratio for SIC 60.2 (0.11)
3. Equal to attributable revenue (£322m) x GVA ratio for SIC 60.2 (0.36)

## Video Platforms

Video platforms have also historically been a highly significant release window for the film sector – for decades, physical video formats such as VHS, and later DVD, then Blu-ray, have been a key revenue source. In recent years, however, the revenue from the sales and rentals of physical video has declined, with the growing adoption of various digital video platforms such as VoD, subscription video-on-demand (SVoD) and transactional video-on-demand (TVoD).

Figure 17 shows that the value of physical video sales and rentals and digital video have converged significantly in recent years.

The value generated in the total video platforms market saw a large increase in 2016 to reach £366.0 million, the highest value in the last eight years (Figure 17).<sup>46</sup> For the time being, physical video revenues continue to exceed those from digital video, though current trends see strong growth in the digital sector.

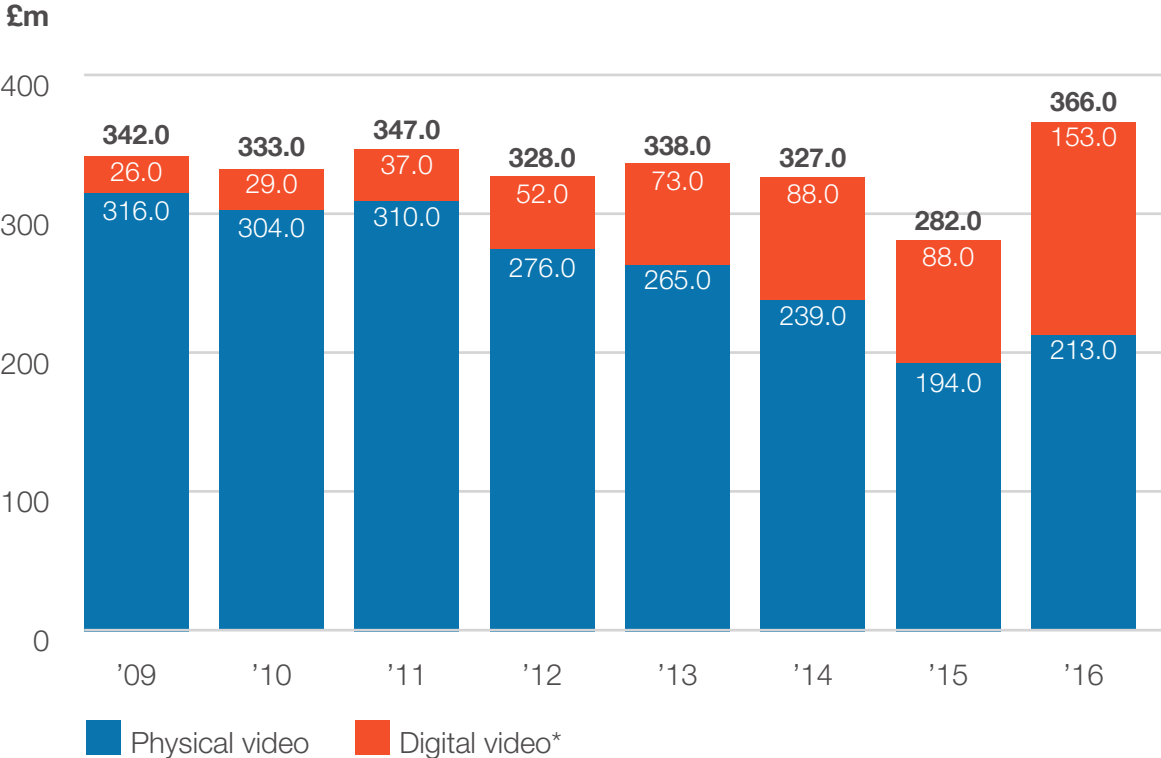
<sup>44</sup>. See Appendix 4, Section 14.1.1 for detailed description of derivation of the average FTE cost

<sup>45</sup>. Data from IDBR indicate that total employment in SIC 60.2 was 42,879 in 2016. Based on an FTE conversion rate of 0.969, this total employment is equivalent to 41,540 FTEs

<sup>46</sup>. Statistical Yearbook 2017. Ibid, p. 165



**Figure 17**  
**Value of UK Films in Physical Video and Digital Video Markets in the UK, 2009-16 (£m)**



Source: BASE, Official Charts Company, IHS, BFI RSU analysis (BFI Statistical Yearbook 2017, Table 14.1)  
 \* Includes VoD, SVoD and TVoD

**Physical Video**

To estimate the economic contribution attributable to UK films in the physical video market, ABS data for SIC 47.63 (Retail sale of music and video recordings in specialised stores) was used to derive labour compensation and GVA ratios, which were multiplied by attributable revenue. ABS data indicate that the labour compensation ratio in SIC 47.63 was 0.098; the GVA ratio was 0.16. To estimate the employment contribution, labour compensation was divided by an average FTE cost of £21,820 for SIC 47.<sup>47</sup>

Based on these metrics for SIC 47.63 and SIC 47, UK films’ attributable revenue of £213.0 million for physical video in 2016 generated 960 direct FTEs, £20.9 million in direct labour compensation and £32.4 million in direct GVA.

**Digital Video**

To estimate the economic contribution attributable to UK films in the digital video market public financial information for Amazon’s video operations in the UK and VoD services in Canada were used to derive labour compensation and GVA ratios. This data was also used to estimate an employment ratio (i.e. the number of FTEs employed per million pounds of turnover).

<sup>47</sup> The median weekly full-time salary excluding overtime pay for SIC 47 (£379) was used to derive the average FTE cost, since physical videos are sold across a variety of retail outlets

This public information indicated that digital video platforms displayed an employment ratio of 1.7 FTEs per million pounds, a labour compensation ratio of 0.076 and a GVA ratio of 0.212. Based on these ratios, the attributable revenue of £153.0 million in 2016 generated 260 direct FTEs, £11.6 million in direct labour compensation and £32.4 million in direct GVA.

### Video platforms summary

In total, therefore, the revenue attributable to UK films on video platforms (£366.0 million) generated 1,220 direct FTEs, £32.5 million in direct labour compensation and £64.8 million in direct GVA in 2016 (Table 7).

**Table 7**  
**Direct Economic Impact of UK Films on Video Platforms, 2016**

	Value of UK films (£m)†	Employment (FTEs)	Labour compensation (£m)	GVA (£m)
Physical video	213.0	960	20.9	32.4
Digital video	153.0	260	11.6	32.4
<b>Total</b>	<b>366.0</b>	<b>1,220</b>	<b>32.5</b>	<b>64.8</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, I.H.S., ABS, CRTTC, public financial reports, Official Charts Company, BASE, ASHE

† Attributable revenue

Note: Some figures may not sum due to rounding. See Appendix 4, Section 14.1.1 for description of methodology

## 4.3.5 Summary of Direct Economic Impact

The analysis of the above sub-sectors – production, distribution, cinema exhibition, and video platforms – has been brought together to estimate the direct economic impact of the core UK film sector. In total, this shows that film generated 28,250 direct FTEs in 2016 along with £1.07 billion in direct labour compensation and £2.46 billion in GVA (Table 8).

**Table 8**  
**Summary of Direct Economic Impact of UK Film Across the Screen Sector Value Chain, 2016**

	Production	Distribution	Cinema exhibition	Television broadcast	Video platforms†	Total
Employment (FTEs)	19,820	1,760	4,720	730	1,220	<b>28,250</b>
Labour compensation (£m)	766.2	139.4	96.3	35.5	32.5	<b>1,069.9</b>
GVA (£m)	947.1	1,107.1	223.2	116.3	64.8	<b>2,458.5</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, CRTTC, public financial reports, Official Charts Company, BASE and ASHE

Note: Some figures may not sum due to rounding. See Appendix 4, Section 14.1.1 for description of methodology

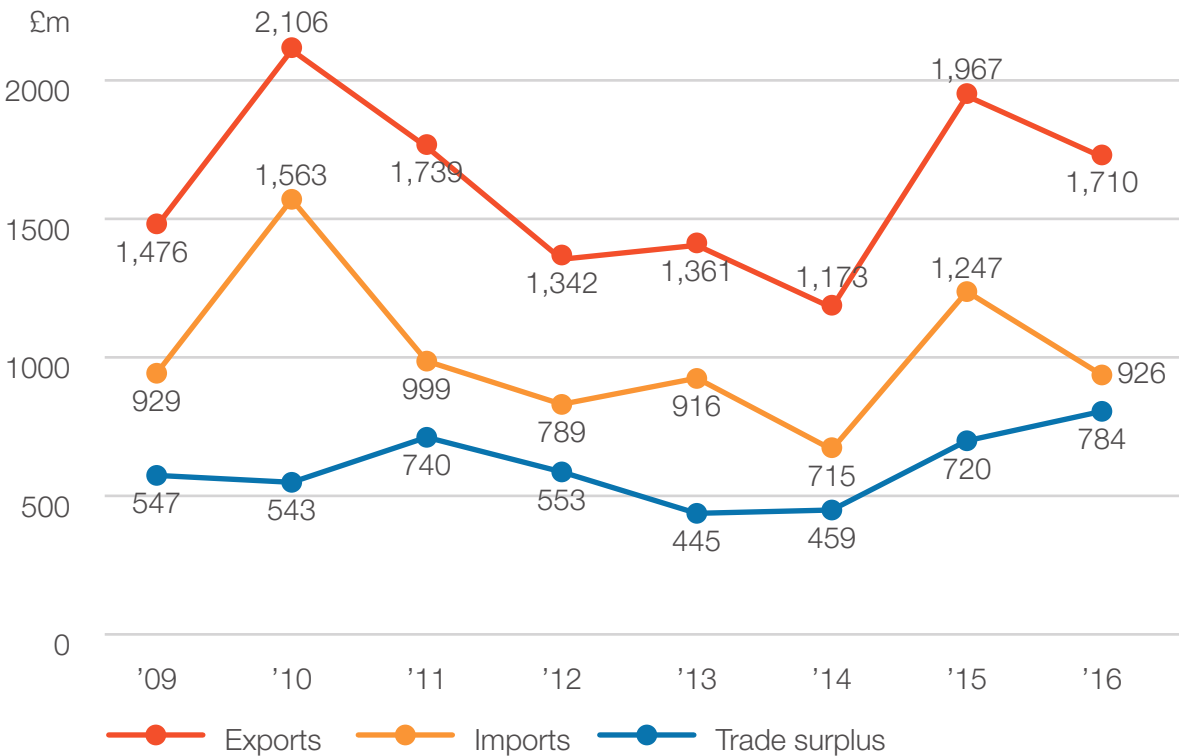
† Includes physical video sales and rentals, and digital video (i.e. VoD/SVoD/TVoD)

### 4.3.6 International Trade

The film sector is a significant source of export revenues for the UK economy. This reflects the fact that a major part of the core UK film sector is directly linked to the receipt of royalty revenue from the exploitation of UK IP overseas, as well as the sale of UK-based production services to foreign investors; the ITIS dataset used to analyse this element of the sector covers both of these.<sup>48</sup>

In 2016, the UK film sector generated over £1.71 billion in exports for the UK economy and contributed to a trade surplus of £926.0 million (Figure 19).<sup>49</sup>

**Figure 18**  
**International Trade in the UK Film Sector, 2009-16†**



Source: International Trade in Services 2015

Notes:

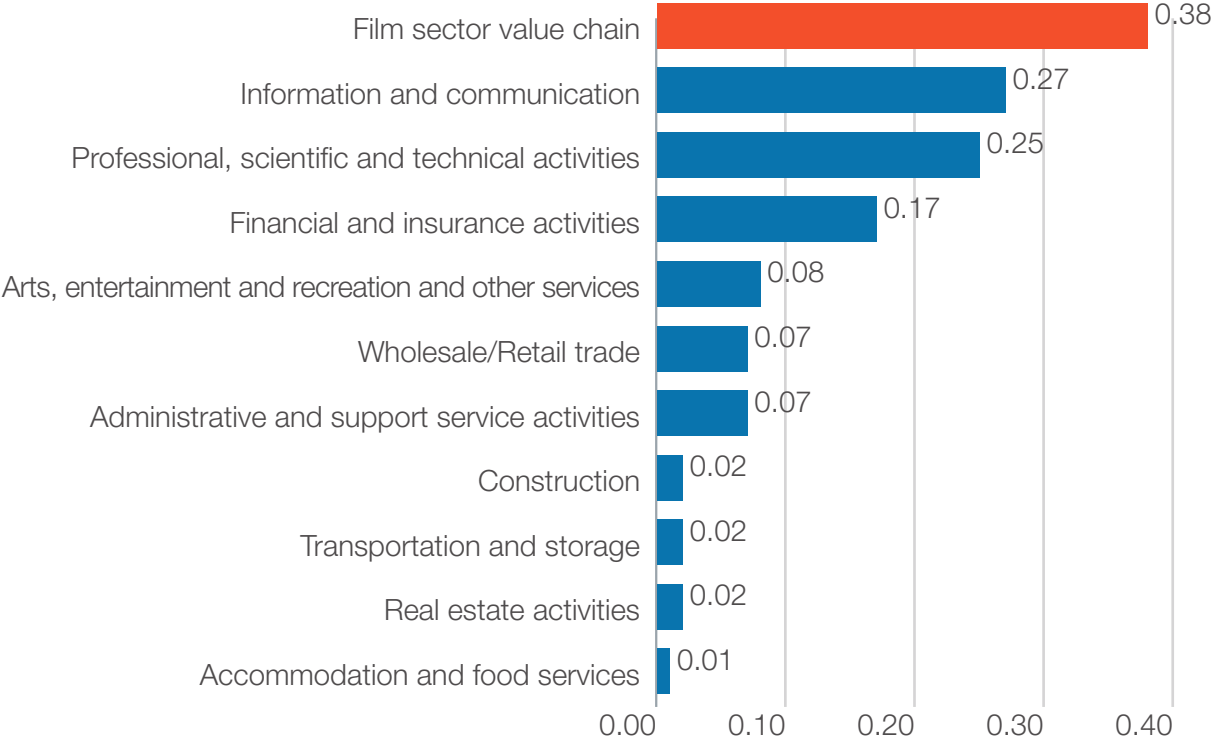
- † Includes trade in intellectual property, and audio-visual and related services
- 1. Exports include sums receivable from residents in other countries, excluding “other services”
- 2. Imports include sums payable to residents in other countries, excluding “other services”

In order to provide context, the export-to-GVA ratio for the film sector (including all sub-sectors) was compared to the other services industries in the UK economy, as defined by the ONS. The results of this (Figure 20) show the film sector having a significantly better ratio than other UK services industries, having achieved a ratio of 0.38, compared with the next best sector reaching just 0.27.

<sup>48</sup>. The sale of production services to studios outside the UK is often also referred to as “inward investment” because it brings investment to the UK which is spent in the creation of a UK company – a production special purpose vehicle (SPV) – that retains UK employees, much in the same way as an offshore company opening an office in the UK would do

<sup>49</sup>. ONS, International Trade in Services Survey, 2016

**Figure 19**  
**Exports-to-GVA ratio, UK Film Sector vs. UK Services Industries, 2012-2016**



Source: Olsberg•SPI/Nordicity estimates based on data from ONS International Trade in Services 2016, BFI, Attentional, Ofcom, I.H.S., ABS, CRTIC, public financial reports, Official Charts Company, BASE and ASHE

### 4.3.7 Capital Investment

The long-term stability of the UK’s tax reliefs – in particular the FTR, but also the HETR – creates confidence in the sector. This has led to film-related private capital investments in the UK. Given the very high level of demand for existing UK screen sector facilities in recent years, there have been a range of significant, current or recent investments, which generate important additional value for the UK economy. A number of current investments are outlined in the following table.<sup>50</sup>

In addition to these investments, a wide range of studio investments have been announced or are actively being planned. These are taking place at locations including Shepperton where a consultation on expansion is ongoing and the anticipated newbuild Dagenham Studios. Furthermore, a number of studios have expanded their capacity, exemplified by the opening of an approximately 300,000 sq. ft extension at Pinewood.

**Table 9**  
**Current and Future Capital Investment Programmes in UK Facilities**

Facility	Investment (£m)
Shepperton Studios, Surrey	500
Pentland Studios, Scotland	140
Pinewood Studios, Buckinghamshire	120
Littlewoods Studios, Liverpool	30
Church Fenton Studios, Yorkshire	21
Belfast Harbour Studios, Northern Ireland	20
Space Project, Manchester	14
Elstree Studios, Hertfordshire	4.5
Warner Bros. Studios, Leavesden, Herts.	Unstated
Wolf Studios, Cardiff	Unstated
<b>Total</b>	<b>c. 850m</b>

Source: Olsberg•SPI/Nordicity analysis of media releases. Investment column refers to amounts announced publicly rather than final amounts invested.

As was noted in the 2015 Study for some period the UK facilities sector has been considered to be ‘full’ by potential inward investment providers.<sup>51</sup>The availability of new studio facilities will help further grow infrastructure to meet demand, and spread investment across the UK, whilst also underlining the confidence which exists in the UK sector and tax relief system.

<sup>50</sup>. These investments will be leveraged by both film and HETV productions, though there is no way to apportion these between the two reliefs

<sup>51</sup>. Economic Contribution of the UK’s Film, High-End TV, Video Game, and Animation Programming Sectors. Ibid

## 4.4 Total Economic Impact

As with many other parts of the economy, the film sector generates significant indirect and induced impacts. Film production and the film sector value chain involve the purchase of supplies and services from a variety of other non-screen sectors, from electricians, to legal and catering; this is referred to as the indirect impact, and increases income and employment in these supplier sectors.

The cast and crew employed by the film sector, and those employed in its supplier sectors, also re-spend their income within the wider economy, which generates further economic activity. This is referred to as the induced impact.

The total economic impact is equal to the sum of the direct, indirect and induced impacts.

In order to identify the indirect and induced impacts, the ONS's input-output (I-O) tables were used to generate a bespoke economic impact model for the sector.<sup>52</sup> This I-O model approach supersedes the reliance upon multipliers in previous studies, and represents best practice for impact analyses; it has been adopted following feedback from HMT and the DCMS.

By using an I-O model approach, the modelling of indirect and induced impact can more accurately reflect the input structures of the various film sub-sectors and any changes in those inputs structures which have occurred since previous multipliers were originally estimated in Cambridge Econometrics' 2005 economic contribution study.

This model indicated that the core UK film sector's total economic impact in 2016 was equal to 60,240 FTEs of employment, £1.99 billion in labour compensation and £4.10 billion in GVA (Table 10).

**Table 10**  
**Total Economic Impact Generated by UK Films Across the Screen Sector Value Chain, 2016**

		Production	Distribution	Cinema exhibition	Television broadcast	Video platforms†	Total
Employment (FTEs)	Direct	19,870	1,760	4,720	730	1,220	<b>28,250</b>
	Indirect	12,970	3,900	2,430	550	730	<b>20,580</b>
	Induced	8,190	1,440	1,100	250	430	<b>11,410</b>
	<b>Total</b>	<b>40,980</b>	<b>7,100</b>	<b>8,250</b>	<b>1,530</b>	<b>2,380</b>	<b>60,240</b>
Labour compensation (£m)	Direct	766.2	139.4	96.3	35.5	32.5	<b>1,069.8</b>
	Indirect	340.1	115.7	63.6	16.2	19.7	<b>555.4</b>
	Induced	276.6	39.0	29.8	6.6	11.8	<b>363.7</b>
	<b>Total</b>	<b>1,382.9</b>	<b>294.1</b>	<b>189.7</b>	<b>58.3</b>	<b>64.0</b>	<b>1,989.0</b>
GVA (£m)	Direct	947.1	1,107.1	223.2	116.3	64.8	<b>2,458.5</b>
	Indirect	665.3	226.0	122.5	31.9	32.9	<b>1,078.5</b>
	Induced	403.1	71.0	54.2	12.1	21.5	<b>561.8</b>
	<b>Total</b>	<b>2,015.5</b>	<b>1,404.1</b>	<b>399.9</b>	<b>160.2</b>	<b>119.1</b>	<b>4,098.8</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, CRTIC, public financial reports, Official Charts Company, BASE and ASHE

Note: Figures may not sum to totals due to rounding. See Appendix 4, Section 14.2 for methodology

† Includes DVD/Blu-ray sales and rentals, and VoD/SVoD/TVoD

<sup>52</sup>. A full analysis of this methodological approach can be found in Appendix 4

## 4.5 Time Series Statistics

As a result of the revisions undertaken to the methodology in this Study (as outlined in sections 4.3 and 4.4), the statistics presented are no longer comparable with those in previous published analyses of the sector. In order to allow for such comparisons to be drawn, the updated methodology has been applied to data from previous years in order to provide trend analysis.

The revised historical statistics clearly show the film sector's strong growth between 2009 and 2016 (Table 11). Over that seven-year period, the sector created approximately 15,000 FTEs of employment and increased its GVA contribution by 73%.

Whilst the long-term trend was one of growth, the sector did experience some interim decreases in economic contribution, such as in 2012. However, this decrease may have related more to production reporting than real year-to-year fluctuations in production activity. For example, while *Skyfall* started production in late 2011 and continued into 2012, BFI reporting practices mean that its entire budget was attributed to 2011. This is likely to have exaggerated the decrease in the economic contribution in 2012. Therefore, the trend in economic contribution was smoother than the headline statistics indicate.

**Table 11**  
**Historical Economic Contribution, UK Film Content, Film Value Chain, 2009-16**

		2009	2010	2011	2012	2013	2014	2015	2016
Employment (FTEs)	Direct	21,710	21,450	25,000	19,660	19,320	24,850	27,000	28,250
	Indirect	14,840	13,590	16,630	12,630	13,370	17,960	19,940	20,580
	Induced	8,340	7,790	9,220	7,040	7,600	10,130	10,930	11,410
	<b>Total</b>	<b>44,890</b>	<b>42,830</b>	<b>50,850</b>	<b>39,330</b>	<b>40,290</b>	<b>52,940</b>	<b>57,870</b>	<b>60,240</b>
Labour compensation (£m)	Direct	728.6	685.4	790.8	629.0	702.9	895.7	955.4	1,069.9
	Indirect	362.5	332.7	414.1	326.5	362.1	474.9	529.5	555.4
	Induced	243.0	228.2	271.3	213.4	242.3	318.8	340.9	363.7
	<b>Total</b>	<b>1,334.1</b>	<b>1,246.3</b>	<b>1,476.2</b>	<b>1,168.9</b>	<b>1,307.2</b>	<b>1,689.5</b>	<b>1,825.8</b>	<b>1,989.0</b>
GVA (£m)	Direct	1,289.1	1,260.8	1,433.2	991.7	1,422.3	1,586.2	2,024.3	2,458.5
	Indirect	710.1	647.0	809.5	636.7	696.4	963.9	1,032.4	1,078.5
	Induced	369.3	348.5	416.3	330.5	372.0	501.5	531.1	561.8
	<b>Total</b>	<b>2,368.5</b>	<b>2,256.4</b>	<b>2,659.0</b>	<b>1,958.9</b>	<b>2,490.7</b>	<b>3,051.5</b>	<b>3,587.7</b>	<b>4,098.8</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, comScore, CRTIC, public financial reports, Official Charts Company, BASE and ASHE

Note: Figures may not sum to totals due to rounding

## 4.6 Spillover Impacts

This section has so far dealt with the economic impacts purely within the film sector itself, and its supply chains. However, the sector also creates benefits, or 'positive externalities' for other sectors. These are known as spillover impacts. In this section, three of the spillover impacts associated with the film sector: tourism, merchandise sales and UK brand promotion are analysed.

### 4.6.1 Inbound Tourism

The tourism benefits associated with films are being increasingly recognised, with visitors often willing to travel to locations or settings for prolonged periods of time because of its screen association. These stays naturally bring economic benefits which are calculated in this section.

The UK in particular has had films and franchises with a strong sense of place and culture in recent years, such as *Harry Potter*, *Paddington*, and *Kingsman*. Such films have encouraged travel by audiences from all over the world, as well as being prominently featured in UK tourism advertising campaigns.

The methodology used in the 2015 Study was updated with the most recently released data in order to estimate the economic impact of film tourism. This includes information from the ONS, VisitBritain and Olsberg•SPI's own research, and addresses only non-UK tourists coming to the UK.

In 2016, inbound tourists spent an estimated £597.7 million in film-related screen tourism in the UK. This spending generated 13,440 FTEs of total employment (i.e. including direct, indirect and induced impacts) and £628.3 million in total GVA. This economic activity yielded an estimated £194.9 million in tax revenue.

### 4.6.2 Merchandise

The retail sector also sees spillovers from the film sector as a result of merchandising. There are a wide variety of products and sectors influenced by this, such as music, fashion and publishing. In particular, toys and other products aimed at children can be a huge boost to the sector, as the recent Star Wars and previous Harry Potter films have shown.

To estimate the economic impact of this merchandising, the model used in previous studies was updated in order to ensure consistency and comparability. Research conducted in 2012 found that the total value of merchandise sales associated with UK-made films was equivalent to 70% of the domestic UK box office of those films; this figure was used as the basis for this calculation.

The value of these merchandise sales in 2016 was calculated by sourcing the average annual box office of all UK-made films in the UK from 2014-2016. This average was £421.0 million, giving a merchandise estimate of £295.0 million when the 70% is applied. Based on economic ratios for retail sector, this estimate of merchandise spending translates into a total economic impact (i.e. including direct, indirect and induced impacts) of 2,620 FTEs, £100.9 million in GVA and £30.9 million in tax revenue.



### 4.6.3 UK Brand Promotion

Beyond the direct benefits of film-making to the economy from production, tourism and ancillary merchandising sales, there can be further economic – and cultural – benefits to the UK's brand as a result of this activity. The country's image and reputation can be enhanced as a result of appearing on screen and being viewed by audiences and influencers. This creates benefits for 'UK plc' across various sectors by increasing demand for goods and services in other markets. The value of this is demonstrated in the UK Government's GREAT campaign, which uses a variety of UK film content, for example "Bond is GREAT" to promote the country.

In order to estimate this impact the value of product placement in UK films to brands was calculated, with the methodology involving a number of assumptions and steps which are outlined in this section. The model assumes that the agencies who engage in product placement are using a sound business rationale and hence this spend will be worth at least as much as they earn in additional profits.

The most recent data available suggests that the value of product placement is 4.7% of global box office.<sup>53</sup> This model calculates the value of product placement by UK brands in order to attract overseas markets, and hence needs to calculate the box office of UK films outside of the UK. According to the BFI, in 2016 UK films earned £4.81 billion at the global box office, £428 million of which was earned in the UK. Hence £4.39 billion was made by UK films outside of the UK in 2016.

A large portion of this box office came from films which were studio-backed but made by UK producers, so in order to ensure only revenues made by UK producers are calculated, this share was discounted by 50%. Such a change reflects the fact that while *Star Wars*, for example, promotes the UK, its locations and businesses, this value is shared with Disney and its resorts around the world. This leaves an adjusted value of £2.33 billion.

This adjusted value was multiplied by 4.7% to get an estimate of the amount paid by UK brands to access overseas markets – £109.0 million. Based on average operating profit margin of 12.2% during 2016 by private non-financial corporations in the UK, this payment would therefore represent at least £895.0 million in increased sales for 2016 outside of the UK.<sup>54</sup>

Using ratios between turnover and GVA/employment derived from ONS data for 2016, this £895.0 million generated an additional 10,500 FTEs, £403.0 million in GVA and £90.0 million in tax revenue.

<sup>53</sup>. Warc (2013), "Global product placement spend rise", Warc, 13 April 2013, accessed at: [warc.com/NewsAndOpinion/News/31278?MPAA](http://warc.com/NewsAndOpinion/News/31278?MPAA) (2013), *Theatrical Market Statistics 2012*, p. 4

<sup>54</sup>. [ons.gov.uk/economy/nationalaccounts/uksectoraccounts/bulletins/profitabilityofukcompanies/aprtojun2016#main-point](http://ons.gov.uk/economy/nationalaccounts/uksectoraccounts/bulletins/profitabilityofukcompanies/aprtojun2016#main-point)

## 4.7 Overall Economic Contribution

Bringing together the impacts of all parts of the value chain and spillovers, the overall economic contribution identified as a result of core UK film production in 2016 generated 86,800 FTEs, £5.23 billion in GVA and £1.28 billion in tax revenue (Table 12).

**Table 12**  
**Summary of Overall Economic Contribution of Core UK Film Sector, 2016**

	Employment (FTEs)	GVA (£m)	Tax Revenue (£m)
Total economic impact	60,240	4,098.8	967.8
<b>Spillover impacts:</b>			
Tourism	13,440	628.3	194.9
Merchandise sales	2,620	100.9	30.9
UK Brand Promotion	10,500	403.0	90.0
<b>Overall economic contribution</b>	<b>86,800</b>	<b>5,231.0</b>	<b>1,283.6</b>

## 4.8 Impact of the Film Tax Relief

Across the film sector value chain, UK film content generated an estimated £1.28 billion in HM Treasury revenue in 2016, against a total estimated outlay on FTR of £343.6 million. This tax revenue impact included £159.5 million in VAT on the retail sales of cinema tickets, DVD sales/rentals, and digital transactions and subscriptions.<sup>55</sup> The tax impact also included Income Tax, National Insurance Contributions (NIC) and Corporation Tax generated by the employment and economic activity associated with direct, indirect and induced impacts.

**Table 13**  
**HM Treasury Revenue, UK Film Content, Film Value Chain, 2009-16 (£m)**

	2009	2010	2011	2012	2013	2014	2015	2016
Direct VAT	91.5	107.9	136.1	128.1	106.3	118.4	175.0	159.5
Direct	292.8	274.0	312.0	237.4	291.6	356.9	395.0	460.2
Indirect	142.1	130.0	162.2	127.7	140.9	188.6	207.2	216.9
Induced	87.2	82.0	97.7	77.1	87.3	115.7	123.3	131.2
Spillover	152.7	171.5	196.4	239.4	243.8	225.0	249.4	315.8
<b>Total</b>	<b>766.4</b>	<b>765.4</b>	<b>904.3</b>	<b>809.7</b>	<b>869.9</b>	<b>1,004.7</b>	<b>1,149.8</b>	<b>1,283.6</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, comScore, CRTIC, public financial reports, Official Charts Company, BASE, ASHE, ONS and HM Revenue

Note: Figures may not sum to totals due to rounding

<sup>55</sup> The tax impact modelling assumes that the VoD/SVoD/TVoD spending in UK does not yield VAT. It also assumes that each part of the value chain does not generate non-recoverable VAT on its business-inputs purchases; see Appendix 4, Section 14.7 for details of tax calculations

In order to assess the impact of the FTR, modelling was used to understand how the total economic contribution of the core UK film sector would change in its absence. To do this, new research was conducted, using an online survey of those who used FTR for domestic productions in 2016, and a phone survey of inward investors. These surveys asked about the importance of FTR in production decisions, and the answers were weighted by the relative importance of the domestic and inward elements of the sector during 2016.<sup>56</sup>

This research indicated that, for the 2014-2016 period, 91% of production would not have occurred in the absence of the tax relief – i.e. an additionality rate of 91% existed for the production sub-sector.<sup>57</sup> This additionality rate was applied to the production sub-sector, other sub-sectors were discounted to reflect their lower net additionality rates.<sup>58</sup>

Since the additionality research conducted for this Study only applied to the 2014-2016 period, the additionality rates used in previous studies were applied to the 2009-2013 period.<sup>59</sup>

Based on net additionality rates applied to all the sub-sectors (e.g. 91% in 2016 period), FTR outlays in 2016 yielded a return on investment (RoI) of £7.69 in terms of GVA. This means that each pound of FTR yielded £7.69 of GVA for the UK economy in 2016.

Inbound tourism is included within the calculation of additional GVA for Film (and HETV, below) as separate, specific research exists which allows us to estimate the contribution of this element of the spillover impacts with greater precision and because inbound-tourism spending is commonly viewed as additional to the UK economy. As this does not exist for other spillovers at this time – or for tourism in other tax relief-supported sectors, in particular ATR, where it plays an important role – this cannot be done throughout the study.

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<sup>56</sup>. See Appendix 4, Section 14.4 for more details; for the purpose of the additionality research, domestic productions include co-productions

<sup>57</sup>. See Appendix 4, Section 14.4 for details

<sup>58</sup>. See Appendix 4, Section 14.4 for details of the discounting approach

<sup>59</sup>. 2013: Olsberg-SPI (2015), Economic Contribution of the UK's Film, High-End TV, Video Game and Animation Programming Sectors, p. 49; 2012: Oxford Economics (2012), The Economic Impact of the UK Film Industry, p. 56; 2009-2011: Oxford Economics (2010), The Economic Impact of the UK Film Industry, p. 92

**Table 14**  
**Impact of Film Tax Relief, 2009-16**

	2009	2010	2011	2012	2013	2014	2015	2016
Total expenditures	1,256.0	1,155.0	1,328.0	1,010.0	1,166.4	1,572.5	1,556.0	1,718.0
Tax relief outlays <sup>1</sup>	213.5	196.4	225.8	171.7	198.3	305.1	311.2	343.6
Overall Economic Contribution GVA (£m)	2,861.6	2,810.0	3,292.8	2,731.7	3,277.6	3,867.7	4,478.4	5,231.0
Additional GVA (£m)	1,415.7	1,386.7	1,573.9	1,277.0	1,413.0	2,178.2	2,301.1	2,642.6
<b>GVA RoI (£)<sup>2</sup></b>	<b>6.81</b>	<b>6.71</b>	<b>6.96</b>	<b>7.43</b>	<b>7.18</b>	<b>7.13</b>	<b>7.39</b>	<b>7.69</b>

Source: Olsberg•SPI/Nordicity estimates based on data from the BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, comScore, CRTIC, public financial reports, Official Charts Company, BASE, ASHE, ONS and HM Revenue

Notes:

1. Estimated at 20% of total expenditures

2. RoI is measured as pound returned per £1 of tax relief and takes into account the net impacts and tax relief outlays in the specific year



# The High-end Television Sector

5

## Differences compared to the 2015 edition of this Study

As with the film sector, the analysis of the high-end television (HETV) sector also utilises an updated methodology. This is based on a bespoke economic impact model, which draws on input-output tables published by the Office for National Statistics (ONS) and conclusions from an analysis of job creation within the screen sectors, undertaken for the BFI's Research and Statistics Fund.<sup>60</sup>

In the case of HETV, this methodological approach is much closer to the 2015 Study's model, though the use of the job creation model means that the analyses are nonetheless not comparable. Trend analyses included in this section have been updated in line with the revised methodology and are different to those reported in 2015.

## 5.1 Context and Key Findings

Since the introduction of High-End Television Tax Relief (HETR) in 2013, production in the UK's HETV sector has boomed, with expenditure rising from £414.9 million in 2013 to £896.7 million in 2016.<sup>61</sup>

HETV is defined as television programming for which the production budget is greater than or equal to £1.0 million per slot time hour and the UK produces a range of programmes that meet this criteria which attract significant attention, both within the UK and globally. In 2016, for example, *Cold Feet*, *Black Mirror*, and *Grantchester* all qualified for HETR.

HETV production spend generated 13,090 direct full-time equivalent (FTE) jobs throughout all parts of the value chain in 2016, and 26,670 FTEs in total once indirect and induced impacts are taken into account. HETV content, therefore, generated a total economic impact of £1.45 billion in gross value added (GVA) for the UK in 2016.

There are also significant spillover impacts. Currently, these mostly relate to tourism, although it is anticipated that other spillover impacts will emerge as the sector matures.

The production sub-sector continues to generate strong returns for HM Treasury. In 2016, each pound of HETR granted leveraged £6.10 in GVA for the UK economy.

<sup>60</sup>. This research will be published in Autumn 2018

<sup>61</sup>. BFI Screen Sector Certification Production, p26. HETV expenditure in the UK continued to increase in 2017, reaching £984.6m

# 5.2 Value Chain Overview

As with the film sector, the assessment of the economic contribution of HETV focuses on television programmes which qualify for tax relief, and not the UK television sector in its entirety. Similarly, this contribution has been analysed by means of a value chain approach that include the economic contribution made by HETV content across the production, distribution, television broadcast and video platform parts of the value chain.

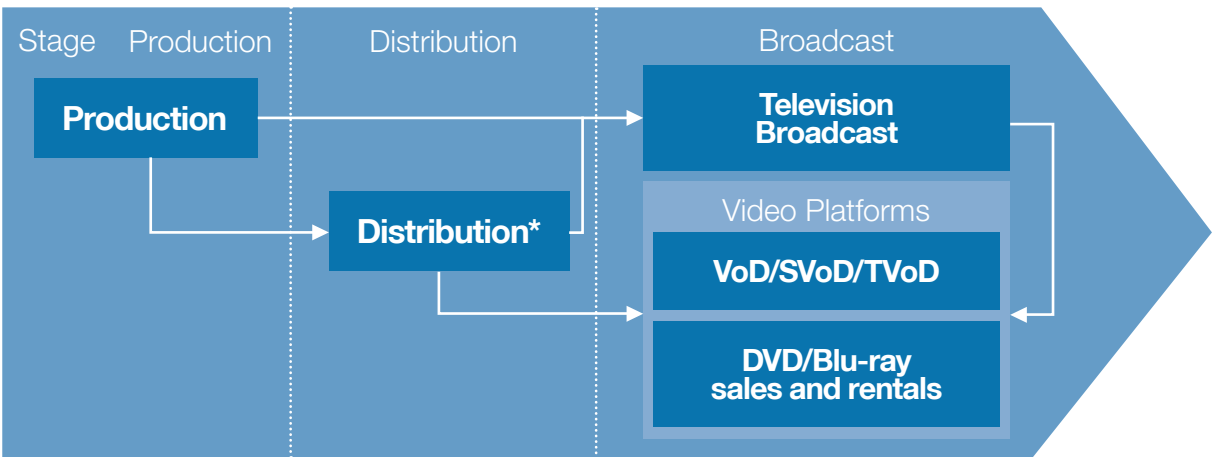
For the HETV sector, the value chain begins with a production stage during which producers conceive, develop, and receive a broadcaster commission to make the content. In contrast to the film sector, HETV projects normally go straight to broadcast from the production stage without a distributor as an intermediary.

This is not to suggest that distribution does not exist for HETV; a small number of broadcasters will directly acquire the rights to an HETV project during the production stage. Alternatively, the production company will use either its own distribution arm or a third party to secure further economic activity through secondary distribution to other broadcasters or platforms outside of the primary window and market to earn additional revenue.

The broadcast stage of the value chain has, traditionally, been the primary window for the release of television content. However, the role of other platforms – in particular video-on-demand (VoD) and subscription video-on-demand (SVoD) – has been increasing rapidly in recent years. Whereas such platforms began by acquiring content produced for traditional broadcasters, they now represent alternative major primary windows in their own right.

Consumers also use VoD and physical video (i.e. DVD and Blu-ray) as ways to watch HETV content which has already premiered on broadcast television or digital video platforms, or even as their primary way to watch such content. Because of this, viewing of HETV in the video platforms sub-sector – particularly through VoD and SVoD – can either follow or precede viewing on broadcast television.

**Figure 20**  
**HETV Value Chain**



\*A distributor may or may not be involved, depending on the structure of the production

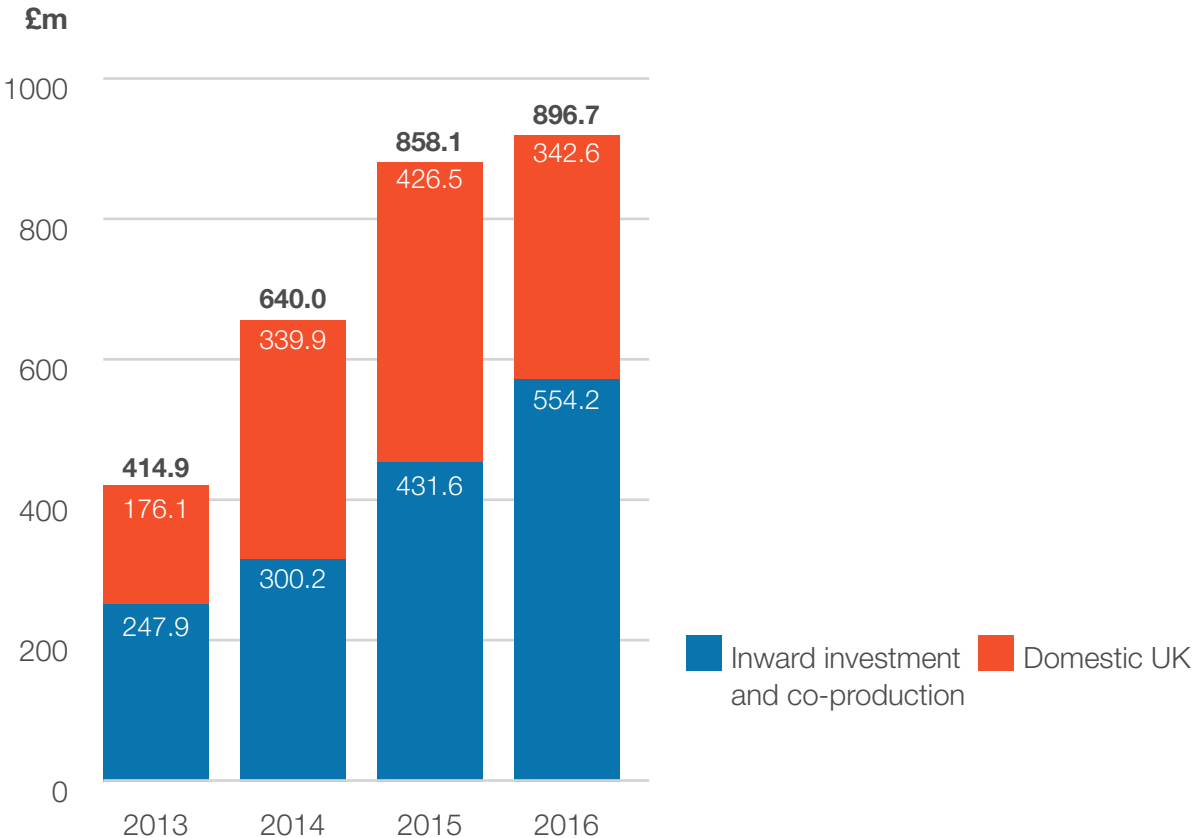


# 5.3 Direct Impact

## 5.3.1 Production

Statistics compiled by the BFI indicate that £896.7 million was spent on the production of qualifying HETV programmes in the UK during 2016.<sup>63 64</sup> These expenditures included £342.6 million in domestic UK productions, and £554.2 million in inward investment and co-productions.<sup>65 66 67</sup>

**Figure 21**  
**UK Spend on HETV Production, 2013-16 (£m)**



Source: BFI  
 Note: Spend is allocated to the year in which principal photography started, or to the year in which the visual effects were undertaken in the case of projects utilising the HETR for VFX-only production, rather than physical production

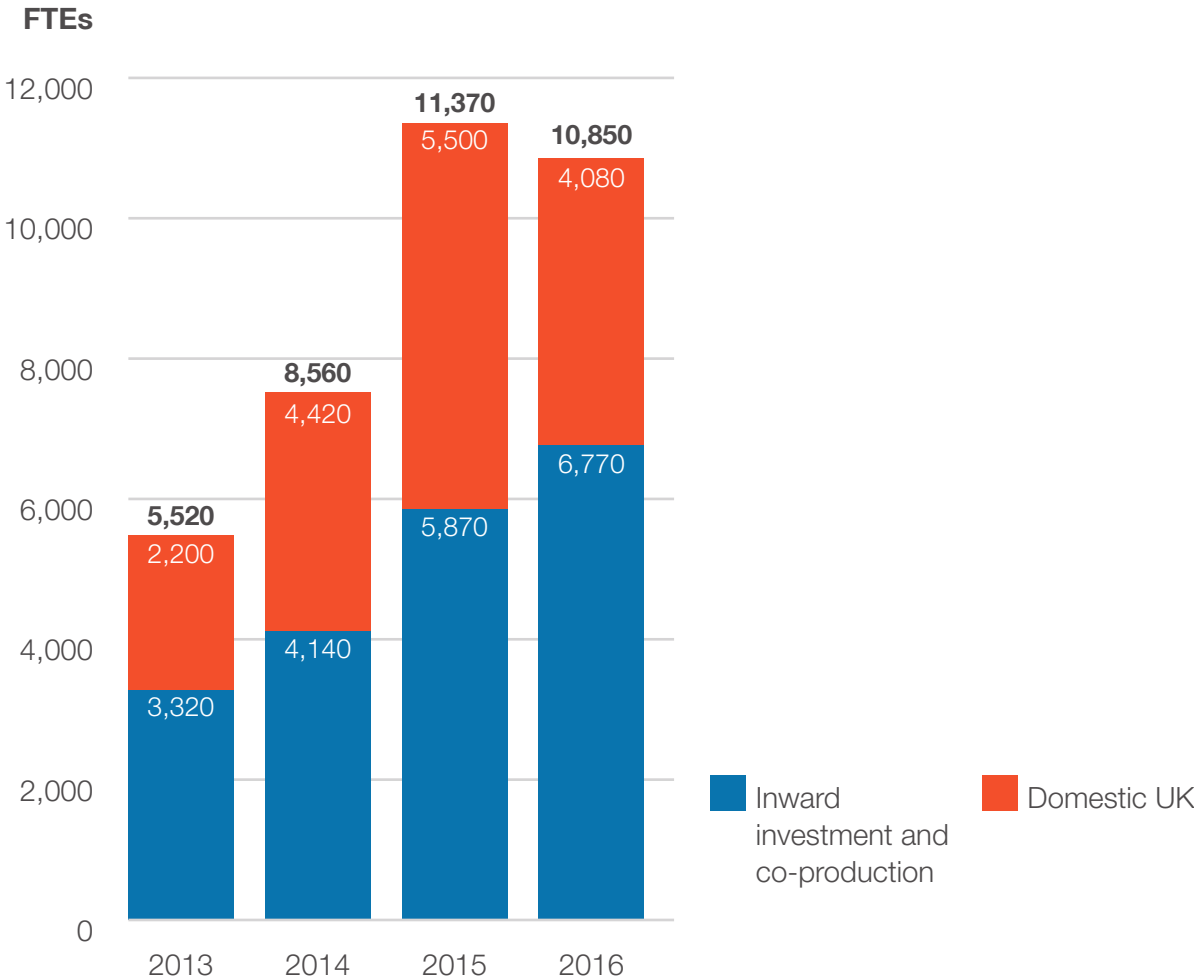
<sup>63.</sup> BFI Statistical Yearbook 2018, Screen Sector Certification and production p.26.  
<sup>64.</sup> Core UK production spend also generates funding for the Creative Skillset Skills Investment Fund through the HETV Skills Levy; set at 0.5% of core UK expenditure in voluntary contributions, this generated approximately £2.4 million for industry-directed skills investment in 2017  
<sup>65.</sup> Ibid  
<sup>66.</sup> In 2017, £984.6 million was spent on HETV production in the UK, of which £702.9 million was inward investment and co-production  
<sup>67.</sup> Co-productions are included with Inward Investment as a reflection of how data are presented in the BFI Statistical Yearbook for 2016; co-productions work differently in the HETV sector than they do in film, see Section 3.6 for details

The results of the Job Creation Model were used to estimate the direct impact of this HETV spending in terms of employment, labour compensation and GVA. This model provided a breakdown of production budgets in different ranges and genres across film and HETV, enabling evaluation of the amount of FTEs created by different types or genres of HETV production. It also provided estimates of the proportion of production spend devoted to direct labour compensation (the direct labour compensation ratio) and GVA (the GVA ratio).<sup>68</sup>

Using this model in combination with actual HETV production spending generates more accurate estimates of direct economic impact than was possible under the methodology used for previous analyses.

The results of this analysis indicate that HETV production generated 12.6 direct FTEs per million pounds spent on production in 2016 (the FTE ratio). Based on this FTE ratio, HETV production generated 10,850 FTEs of employment in 2016 (Figure 22).

**Figure 22**  
**Direct Employment Generated by HETV Production in the UK, 2013-16 (FTEs)**



Source: Olsberg•SPI/Nordicity estimates based on data from BFI, ABS and ASHE

<sup>68</sup>. See Section 4.3.1 for a description of the Job Creation Model

The Job Creation Model also indicated that each million pounds of HETV production generated £0.49 million in direct labour compensation and £0.58 million in direct GVA in 2016. This implied that the total £896.7 million in HETV production in the UK in 2016 generated £434.9 million in direct labour compensation and £517.5 million in direct GVA in 2016 (Table 15).

**Table 15**  
**Direct Economic Impact of HETV Production, 2016**

	Amount
UK spend (£m)	896.7
Employment (FTEs)	11,310
Labour compensation (£m)	434.9
GVA (£m)	517.5

Source: Olsberg+SPI/Nordicity estimates based on data from BFI, ABS and ASHE  
Note: See Appendix 4, Section 14.1.2 for description of methodology

### 5.3.2 Television Broadcast

When HETV programmes are broadcast on television, economic value is generated for UK broadcasters. To estimate the contribution of HETV to the UK’s broadcast sector, an estimation was made of the value that HETV supplies to broadcasters’ turnover, employment, labour compensation and GVA by virtue of the audiences that HETV programming attracts, and the net advertising sales that these audiences generate for commercial broadcasters.<sup>69</sup>

To estimate this contribution, Attentional analysed the audience ratings for a list of HETV titles which have accessed the tax relief since its introduction.<sup>70</sup> This analysis established the audience for each HETV programme airing on commercial television in the UK, which was converted into an estimate of the net advertising revenue (revenue less ad-placement commissions) which such a programme would achieve.

Such revenue estimates were also generated for HETV programmes airing on the BBC, even though these do not generate advertising revenue. This was achieved by matching HETV programmes on the BBC with their closest commercial equivalent by genre and budget.<sup>71</sup>

The results of Attentional’s audience analysis indicated that HETV programming generated estimated revenues of £267.6 million for commercial broadcasters and the BBC in 2016. This estimated revenue represented 4.2% of the sum of net advertising revenue and BBC income allocated to television operations in 2016 (£6,660m).<sup>72</sup>

<sup>69.</sup> For the BBC, each programme’s audience share was converted to an advertising-equivalent figure; this was used as a proxy for the contribution this programme made to internal BBC employment and GVA

<sup>70.</sup> See Appendix 4, Section 14.5 for a description of the methodology

<sup>71.</sup> Programmes were matched on the basis of the ratio of commercial impacts to audience. A single commercial impact is defined as one viewer watching a single advertisement once. See Appendix 4, Section 14.5 for further details of this approach. A different approach was taken for video platforms including VoD/SVoD: see 5.3.4

<sup>72.</sup> Communications Market Report 2017. Ofcom (2017), p. 51 / Figure 2.11

This economic share<sup>73</sup> of 4.2% was multiplied by the total television broadcasting sector revenue in 2016 (including net advertising, BBC income, subscription revenue and other television revenue) of £13,815.0 million to arrive at estimated attributable revenue of £580.2 million.<sup>74</sup>The television broadcast sector revenue attributable to HETV generated 1,310 FTEs of direct employment, £63.8 million in direct labour compensation and £208.9 million in direct GVA (Table 16).

**Table 16**  
**Direct Economic Impact of HETV on UK Television, 2016**

	Amount
Economic share	4.20%
Attributable revenue (£m)	580.2
Employment (FTEs)	1,310
Labour compensation (£m)	63.8
GVA (£m)	208.9

### 5.3.3 Distribution

HETV programmes are typically commissioned by one or more broadcasters, who pay a fee to license an exclusive right to the first airing of the project in their territory. However, these fees do not usually cover the entire cost of programme production. Therefore, distribution companies and production companies with distribution arms aim to earn revenue from the sales of programmes to other territories, to other consumer platforms, and for subsequent broadcast windows in the original broadcast territories (i.e. secondary release windows or syndication). The revenues from this activity provide a key means of funding the gap in programme production costs not covered by pre-sale financing from commissioning broadcasters.

The large audiences which HETV productions have attracted in recent years also drive value in the distribution market. Where the rights for the programme are held by UK companies, this will consequently generate GVA and employment for the UK economy, in the same way as for the film sector.

To estimate the employment impact in the distribution sub-sector resulting from the exploitation of HETV productions, the economic share established for the broadcasting market (4.2%) was first adjusted to take into account that not all genres of television programming, such as news programming, are subject to a significant degree of distribution following transmission. This exercise raised the economic share of HETV programming to 7.1%.<sup>75</sup> This adjusted economic share was used to estimate the portion of overall economic activity in the UK’s television distribution market that could reasonably be attributed to HETV.

This adjusted economic share (7.1%) was applied on a pro-rata basis to the total turnover, employment, labour compensation and GVA in SIC 59.13/3, Television programme distribution activities, to estimate the portion reasonably attributable to HETV. Based on this approach, HETV generated £65.4 million in turnover, 40 direct FTEs, £4.0 million in direct labour compensation and £19.8 million in GVA for the television distribution sub-sector in 2016. (Table 17).

<sup>73</sup>. Throughout this study, the term ‘economic share’ is used to refer to the share of total economic activity (i.e. employment, labour compensation and GVA) in a specific sub-sector that can be attributed to tax-relief-supported content. This economic share is derived by using the audience share of tax-relief-supported content to estimate the portion of sub-sector revenue that can be attributed to the content. See Section 14.5 for additional description of the methodology.

<sup>74</sup>. Ibid

<sup>75</sup>. See Appendix 4, Section 14.6.1 for description of methodology

**Table 17**  
**Direct Economic Impact of Distribution of HETV, 2016**

	Amount
Economic share of television broadcast market	4.2%
Economic share of television distribution market	7.1%
Attributable revenue (£m)	65.4
Employment (FTEs)	40
Labour compensation (£m)	4.0
GVA (£m)	19.8

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE  
 Note: See Appendix 4, Sections 14.1.2 and 14.6.1 for description of methodology

### 5.3.4 Video Platforms

As with the film sector, the HETV sector also generates economic value for the UK through video platforms. This includes both physical video, such as DVD and Blu-ray sales and rentals, and digital video such as VoD, SVoD and transactional video-on-demand (TVoD) services. This is particularly true of high-end drama which represents the predominant form of content supported by the HETV tax relief.

Video platforms are an increasingly important element of audience consumption of content, augmenting or displacing traditional broadcast television. First, such platforms allow consumers to engage in ‘binge watching’ – the viewing of a large number of episodes of a programme back-to-back through physical or digital box sets – and something that previous consumption models did not allow for. Second, it offers consumers more flexible viewing, enabling them to watch content on any device and at any time. This is a feature that is increasingly important to consumers and one which they have demonstrated that they are willing to pay for.

Once again, adjustments were made to the economic share in the television broadcast market (4.2%) to reflect the fact that certain genres drive consumption of physical and digital video more than others. This exercise raised the economic share of HETV programming on video platforms to 12.8%.<sup>76</sup>

Data on financial performance and economic activity in SIC 47.63, Retail trade of video tapes, CDs, and DVDs/Blu-ray disc, as well as data on employment and financial performance at leading on-demand platforms in the UK and Canada were used to derive estimates of direct economic impact.<sup>77</sup> Based on this approach, HETV generated 430 FTEs of direct employment, £15.0 million in direct labour compensation and £36.8 million in GVA in the video platforms segment in 2016 (Table 18).

<sup>76</sup>. See Appendix 4, Section 14.6.2 for description of methodology

<sup>77</sup>. Canada is one of the few countries where domestic VoD services are licensed by the broadcast regulator, and required to publicly disclose detailed financial and employment data. This financial and employment data is published by the Canadian Radio-television and Telecommunications Commission (CRTC) and provides a unique perspective on the cost structure and labour-intensity of VoD services. See Appendix 4, Section 14.1.2 for further details

**Table 18**  
**Direct Economic Impact of HETV on Video Platforms, 2016**

	Value of HETV (£m)	Employment (FTEs)	Labour compensation (£m)	GVA (£m)
Physical video	42.4	190	4.2	6.4
Digital video	143.4	240	10.9	30.4
<b>Total</b>	<b>185.8</b>	<b>430</b>	<b>15.0</b>	<b>36.8</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, I.H.S., ABS, CRTIC, public financial reports, Official Charts Company, BASE, ASHE

Note: See Appendix 4, Sections 14.1.2 and 14.6.2 for description of methodology, numbers may not sum due to rounding.

### 5.3.5 Summary

Combining the estimates of economic activity from the four parts of the value chain, it can be concluded that the HETV sector generated 13,090 FTEs of direct employment, £517.9 million in direct labour compensation and £783.0 million in direct GVA in 2016 (Table 19).

**Table 19**  
**Summary of Direct Economic Impact of HETV Across the Screen Sector Value Chain, 2016**

	Production	Distribution	Television broadcast	Video platforms†	Total
Employment (FTEs)	11,310	40	1,310	430	<b>13,090</b>
Labour compensation (£m)	434.9	4.0	63.8	15.0	<b>517.9</b>
GVA (£m)	517.5	19.8	208.9	36.8	<b>783.0</b>

Source: Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, CRTIC, public financial reports, Official Charts Company, BASE and ASHE

Note: Figures may not sum to totals due to rounding. See Appendix 4, Section 14.1.2 for description of methodology

† Includes physical video sales and rentals, and digital video platforms (i.e. VoD/SVoD/TVoD)

## 5.4 Total Economic Impact

As with other sectors in this Study, the production and broadcast sub-sectors generate indirect impacts through the purchasing of services and supplies, and induced impacts through the re-spending of wages by those employed in the direct and indirect impact phases.

The total economic impact is equal to the sum of the direct, indirect and induced impacts.

In order to identify the indirect and induced impacts of HETV production spending – as with film – a bespoke model was generated through ONS input-output tables. For this approach, the goods and services purchased by a generic HETV production were categorised, and put into a model derived from the ONS data. The impact of these purchases was then estimated industry by industry, to identify the incremental employment, labour compensation, and GVA which would be generated, using the ONS tables to identify the connections between the various sectors of the UK economy.<sup>78</sup>

This model indicated that HETV generated a total economic impact of 26,670 FTEs of employment, £908.5 million in labour compensation and £1.45 billion in GVA (Table 20).

**Table 20**  
**Total Economic Impact Generated by HETV throughout all parts of the Value Chain, 2016**

		Production	Distribution	Television broadcast	Video platforms <sup>†</sup>	Total
Employment (FTEs)	Direct	11,310	40	1,310	430	<b>13,090</b>
	Indirect	6,670	320	1,000	320	<b>8,310</b>
	Induced	4,500	120	440	210	<b>5,270</b>
	<b>Total</b>	<b>22,480</b>	<b>480</b>	<b>2,750</b>	<b>960</b>	<b>26,670</b>
Labour compensation (£m)	Direct	434.9	4.0	63.8	15.0	<b>517.9</b>
	Indirect	171.2	9.0	29.0	8.9	<b>218.1</b>
	Induced	151.5	3.3	11.9	5.8	<b>172.5</b>
	<b>Total</b>	<b>757.7</b>	<b>16.3</b>	<b>104.8</b>	<b>29.8</b>	<b>908.5</b>
GVA (£m)	Direct	517.5	19.8	208.9	36.8	<b>783.0</b>
	Indirect	328.0	16.8	57.2	14.9	<b>416.9</b>
	Induced	211.4	6.0	21.7	10.5	<b>249.6</b>
	<b>Total</b>	<b>1,056.8</b>	<b>42.6</b>	<b>287.8</b>	<b>62.3</b>	<b>1,499.4</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, CRTG, public financial reports, Official Charts Company, BASE and ASHE

Note: Figures may not sum to totals due to rounding. See Appendix 4, Section 14.1.2 and 14.2 for description of methodology)

<sup>†</sup> Includes physical video sales and rentals, and digital video platforms (i.e. VoD/SVoD/TVoD)

<sup>78</sup>. This approach is detailed in Appendix 4, Section 14.2

## 5.5 Time Series Statistics

As with the film sector, an analysis of trends in production was undertaken, in this case covering all four years of the HETV tax relief (Table 21). This analysis shows the employment generated by HETV increased by nearly 14,000 FTEs between 2013 and 2016. Over that period, the GVA impact of HETV increased by 110%.

**Table 21**  
**Time Series Impact Data, HETR-supported Programming throughout all parts of the Value Chain, 2013-16**

		2013	2014	2015	2016
Employment (FTEs)	Direct	6,310	9,360	12,820	13,090
	Indirect	3,940	5,780	7,950	8,310
	Induced	2,480	3,710	5,080	5,270
	<b>Total</b>	<b>12,730</b>	<b>18,850</b>	<b>25,850</b>	<b>26,670</b>
Labour compensation (£m)	Direct	245.3	355.8	493.9	517.9
	Indirect	102.4	146.2	203.6	218.1
	Induced	80.2	118.6	163.0	172.5
	<b>Total</b>	<b>427.9</b>	<b>620.7</b>	<b>860.6</b>	<b>908.5</b>
GVA (£m)	Direct	376.7	512.6	739.1	783.0
	Indirect	196.0	279.9	389.5	416.9
	Induced	116.1	169.9	235.1	249.6
	<b>Total</b>	<b>688.8</b>	<b>962.4</b>	<b>1,363.7</b>	<b>1,449.4</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, CRTG, public financial reports, Official Charts Company, BASE and ASHE

Note: Figures may not sum to totals due to rounding. See Appendix 5 for additional historical statistics

## 5.6 Spillover Impacts

Similar to film, there are spillovers to other sectors from the HETV sector. In this section, the economic impact of HETV spillovers on the tourism sector are presented.

### 5.6.1. Inbound Tourism

With the increasing popularity of UK-made HETV shows, such as *The Crown*, *Outlander* and *Poldark* and in particular *Game of Thrones*, overseas tourism to shooting locations has surged over the past decade.<sup>79</sup>

As with film, the methodology used in the 2015 Study was updated with the most recently released data in order to estimate the economic impact of HETV tourism. This includes information from the ONS, VisitBritain and Olsberg•SPI's own research, and addresses only non-UK tourists coming to the UK.

<sup>79</sup> *Quantifying Film and Television Tourism in England*, and unpublished Olsberg•SPI research on screen tourism in Northern Ireland



In 2016, inbound tourists spent an estimated £266.2 million in HETV-related screen tourism in the UK. This spending generated 5,990 FTEs of total employment (i.e. including direct, indirect and induced impacts) and £267.8 million in total GVA. This economic activity yielded an estimated £84.2 million in tax revenue.

## 5.7 Overall Economic Contribution

Bringing together the impacts throughout all parts of the value chain and spillovers, the overall economic contribution identified as a result of core HETV production in 2016 generated 32,660 in FTEs of employment, and £1.72 billion in GVA and £466.1 million in tax revenue for the UK (Table 22).

**Table 22**  
**Summary of Overall Economic Contribution of Core UK HETV Sector, 2016**

	Employment (FTEs)	GVA (£m)	Tax Revenue (£m)
Total economic impact	26,670	1,449.4	381.9
Spillover impacts:			
Tourism	5,990	267.8	84.2
<b>Overall economic contribution</b>	<b>32,660</b>	<b>1,717.2</b>	<b>466.1</b>

## 5.8 Impact of the Tax Relief

The creation of HETV programming generated an estimated £466.1 million in tax revenue in 2016, including £31.6 million in VAT on sales of DVD/Blu-rays and digital transactions and subscriptions, and a further £350.3 million in other taxes (Income Tax, NIC, Corporation Tax).<sup>80</sup>

**Table 23**  
**HM Treasury Revenue Generated by HETV Content, 2013-16 (£m)**

	2013	2014	2015	2016
Direct VAT	11.7	12.7	28.1	31.6
Direct	97.2	138.5	194.4	204.6
Indirect	39.8	56.8	79.1	84.7
Induced	28.3	41.8	57.6	61.0
Spillover	0.0	45.2	62.8	84.2
<b>Total</b>	<b>177.0</b>	<b>295.0</b>	<b>422.0</b>	<b>466.1</b>

Source: Olsberg+SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, comScore, CRTC, public financial reports, Official Charts Company, BASE, ASHE, ONS and HM Revenue

Note: Figures may not sum to totals due to rounding. See Appendix 4, Section 14.1.2 for methodology

<sup>80</sup>. See Appendix 4, Section 14.7 for details of tax revenue calculation

In order to assess the impact of HETR, a survey of production companies was conducted to ascertain the portion of HETV production that would have occurred in the absence of HETR, and thereby, the rate of additionality applicable to the existing level of HETV production. This survey research indicated an additionality rate of 78%.

This additionality rate was applied to the production sub-sector, whilst other su-sectors were discounted to reflect their lower net additionality.<sup>81</sup>

Based on the net additionality rates applied to all the sub-sectors HETR outlays in 2016 yielded a Rol of £6.10 in terms of GVA. This means that each pound of HETR yielded £6.10 of GVA for the UK economy during 2016.

**Table 24**  
**HETR Rol, 2013-16** <sup>82</sup>

	2013	2014	2015	2016
Total expenditures	415.0	640.1	858.1	896.7
Tax relief outlays <sup>1</sup>	83.0	128.0	171.6	179.4
Overall Economic Contribution GVA (£m)	688.8	1,106.2	1,563.3	1,717.3
Additional GVA (£m)	460.3	733.6	996.7	1,094.7
GVA Rol (£) <sup>2</sup>	<b>5.55</b>	<b>5.73</b>	<b>5.81</b>	<b>6.10</b>

Source: Olsberg•SPI/Nordicity estimates based on data from the BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, ComScore, CRTS, public financial reports, Official Charts Company, BASE, ASHE, ONS and HM Revenue

Notes:

1. Estimated at 20% of total expenditures.
2. Rol is measured as pound returned per £1 of tax relief and takes into account the net impacts and tax relief outlays in the specific year

<sup>81</sup>. See Appendix 4, section 14.4 for details of the discounted additionality rate

<sup>82</sup>. The Additionality rate in 2013 was estimated by reference to HM Government and Pact projections on the likely impact of the HETR. This has been superseded by original research from 2014 onwards.



# The Video Games Sector

6

## Differences compared to the 2015 edition of this Study

The 2015 economic contribution study did not analyse the impact of the Video Games Tax Relief (VGTR). This reflected the fact that the incentive, introduced in April 2014, had not been in place for a sufficient time to allow the impact on the sector to be determined. Instead, an analysis of the size and impact of the video games sector as a whole was undertaken.

This Study is able to establish the impact of VGTR, but also provides an analysis of the impact of the non-tax relief UK video games sector, which is substantial. This can be found in Appendix 1.

The need for this separate analysis underlines the fact that VGTR is still in its infancy as a tax relief. Despite ongoing promotion, large elements of the video games development community do not yet take advantage of the offer. This likely reflects the fact that the sector has not historically had access to such incentives, and it is not yet a core component of the financing model.

## 6.1 Context and Key Findings

The UK video games sector is a significant entertainment industry, which has produced a wide array of globally-successful and culturally impactful entertainment products, including series such as *Grand Theft Auto*, *Forza Horizon*, and *Monument Valley*. Included within this is the highest-grossing single entertainment product of all time, *Grand Theft Auto V*, which has achieved more than US\$6 billion in worldwide sales to date. The industry continues to grow, and produces leading global technologies and content, including in innovative and emerging areas such as artificial intelligence, virtual reality, augmented reality, and esports.

Given the value of such economic activity, governments around the world such as Canada and France began to establish fiscal incentives to attract video games development spend during the late 1990s and early 2000s. This, combined with an industry not overly dependent on physical location and infrastructure, led to a decline in UK development. Responding to this, HM Government introduced VGTR from April 2014, after the European Commission accepted that there was a market failure in the development of culturally-relevant video games for the European market.<sup>83</sup>

In 2016, total development spend in the sector was £1.25 billion – of which £389.9 million accessed VGTR.<sup>84</sup> Throughout all parts of the value chain, this VGTR-supported spend generated £294.1 million in direct gross value added (GVA), and 4,640 direct full-time equivalent (FTE) jobs.

Including indirect and induced impact across the value chain, the VGTR-supported sector generated an estimated 9,170 FTEs and £522.1 million in GVA.

The major source of spillover impacts from the sector is to the retail sector through merchandise. Bringing in these spillovers, the total is raised to 9,240 FTEs, with £525.0 million in GVA contributions.

VGTR-supported development generates strong returns for HM Treasury. In 2016, each pound of VGTR granted leveraged an additional £4.00 economic activity for the UK economy.

<sup>83</sup>. JOCE L/323/2014, Official Journal of the European Union (7th November, 2014) available at: <http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=OJ:L:2014:323:TOC>

<sup>84</sup>. Figure of £1.25 billion drawn from analysis of companies in Ukie's UK Games Map.

## 6.2 Value Chain Overview

In keeping with the approach taken for other sectors in this Study, a value chain model of the UK's video games sector has been used to analyse the impact of content produced through VGTR.<sup>85</sup> Within the sector, this value chain begins with the development stage, through which studios – both independent and publisher-affiliated – conceive ideas for games, building on these through programming and artistic design.

Historically, this activity required the engagement of publishers, who would purchase the economic rights to sell video games at an early stage of development, providing finance for the generation of the project. In recent years, however, the emergence of digital distribution platforms like Steam (for the PC), or the App Store and Google Play (on mobile) has allowed developers to go straight to the consumer. Crowdfunding platforms such as Kickstarter also allow developers to raise finance directly from their end consumers, while early access models allow them to sell content at an earlier stage of the development process, allowing consumers the opportunity to engage with the latter stages of content creation.

The publishing sub-sector is akin to distribution for film and television, and historically saw relatively well-capitalised companies acquiring rights to a variety of different projects. Such a model allowed publishers to spread their risk, while providing finance for development; the publisher would then distribute and market the final product, aiming to recoup their investment at the exploitation stage. Despite the increasing use of self-publishing by developers, such traditional publishers remain a critical part of the marketplace.

The value chain is completed with consumption, the stage at which the video games purchaser (or player) acquires the final content. Until the middle of the last decade, the majority of such sales were conducted using physical, boxed content, with video games consumption being a physical retail sub-sector as a result. However, digital platforms have increasingly taken over.

These digital platforms play a secondary role in the market, which make it unlike any other sectors studied for this Study. Whereas films and television programmes take the form of prototypes, and cannot normally be altered after release, video games have a feedback cycle, allowing companies to continue working after the initial release. This takes the form of “patching” – changes to the original content to fix errors or enhance the experience – and new downloadable content (DLC), which provides additional features to the game, either for free or at cost to the player.

As a result of this iterative enhancement model, the VGTR is also being used differently from the other tax reliefs, with consultees advising that multiple interim payments are being taken, even following the release of a project.

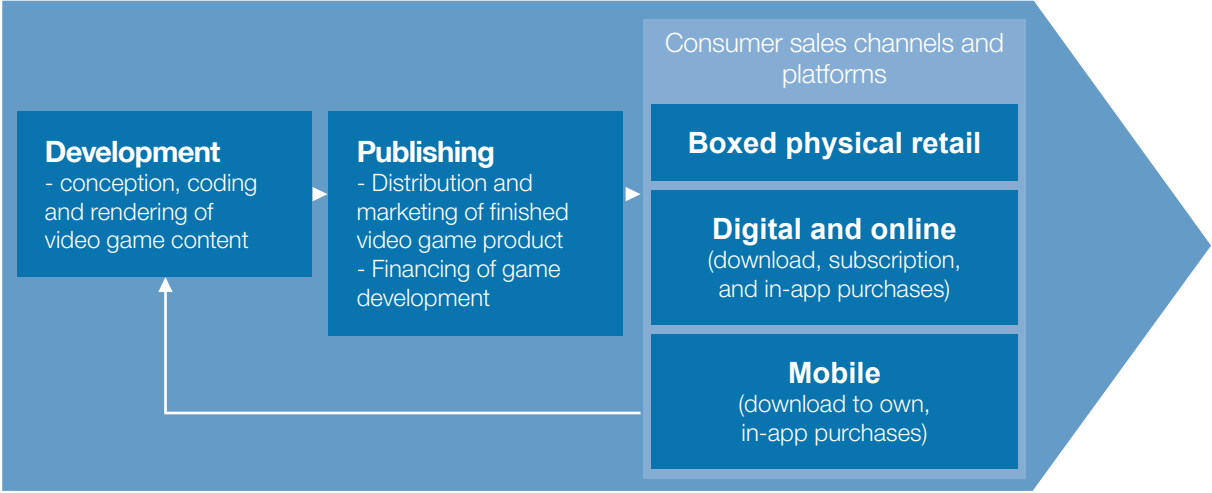
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<sup>85</sup>. A wider evaluation of the impact of the UK video games sector – including non-VGTR supported production – can be found in Appendix 1

This reflects the approach taken for game releases in two ways. Firstly, games development occurs over a long duration – often up to several years – and developers appear to be cashflowing elements of this spend through accessing interim payments. Secondly, as games are subject to enhancement and change subsequent to release – through patching, and free and paid DLC – developers keep their tax relief claims open to cover the additional work needed to generate these changes.

Consumption platforms are based around the European Union, using the single market to sell into all EU and EEA jurisdictions. As such, the economic contribution of these platforms to the UK economy can be negligible. Despite this, their impact has been evaluated in order to maintain consistency with the other sectors.

**Figure 23**  
**Video Game Sector Value Chain**



Although the previous Study in 2015 addressed the video games sector, the timelines for the introduction of VGTR meant that at that stage, an insufficient number of projects had used the tax relief to allow a reasonable analysis of economic value to be undertaken.<sup>86</sup> Though the tax relief remains at a relatively early stage in its development, this is no longer the case and as such this Study evaluates the impact of VGTR for the first time.

However, there are a wide range of video games projects that do not use VGTR for a variety of reasons. A large number of companies in the sector work on projects which are not eligible for the tax relief – particularly those in areas such as middleware – and which may instead use the Research and Development Tax Relief.<sup>87</sup> Other companies choose not to use VGTR, even where they are eligible.

As such, a second element of analysis has been undertaken, which considers the value of the non-tax relief video games sector and presents a complete picture of the full value of the video games value chain to the UK. This can be found in Appendix 1.

<sup>86</sup>. Economic contribution of the UK's film, high-end TV, video game, and animation programming sectors. Ibid  
<sup>87</sup>. Companies can choose either one of these tax reliefs for certain aspects of spending, but cannot use both

## 6.3 Direct Impact

### 6.3.1 Development

To estimate the total value of spending, employment, labour compensation and GVA associated with VGTR, data from Ukie's UK Games Map was combined with research conducted by Ortus Economic Research (Ortus), granular company research from Ukie, and the results of video games sector research conducted by Nordicity for the Entertainment Software Association of Canada (ESAC):<sup>88</sup>

- The Ukie Games Map provided a detailed list of companies engaged in video games development in the UK;
- Data provided by Ortus was combined with research conducted by Olsberg•SPI, Nordicity and Ukie to assign actual or estimated levels of employment and GVA to each company;
- These company-based statistics were aggregated to arrive at an estimate of £826.0 million in total GVA in 2016;
- Survey research conducted for ESAC indicated that the average GVA-to-turnover ratio among Canadian video games developers in 2016 was 0.66.<sup>89</sup> Based on this ratio, overall revenue and expenditure in the UK's full development sub-sector was an estimated £1.25 bn in 2016;
- The ESAC research also indicated that labour compensation accounted for 89.3% of GVA in the development sub-sector. Based on this observation, total labour compensation in the UK's video games development sub-sector was estimated at £737.6m in 2016.

The UK Games Map and the associated company research conducted by Ortus, Ukie, Olsberg•SPI and Nordicity indicated that development companies in the UK employed 14,306 people in 2016. This total employment was converted to FTEs using a FTE conversion factor of 0.97.<sup>90</sup>

In total, it was therefore estimated that total video games development generated 13,840 FTEs of direct employment in 2016.

Based on statistics published by BFI, an estimated £389.9 million was spent in the UK in 2016 on the development of 228 video games supported by the VGTR in 2016.<sup>91</sup> This spend represented 31% of the total estimated turnover and spend in the UK video games development sub-sector in 2016.

The direct economic contribution generated by the development of VGTR titles was estimated by applying their pro-rata share of total development spend (i.e. 31% of £1.25 billion) to the estimates of total employment, labour compensation and GVA across all video games development companies. Based on this approach, the development of VGTR-supported video games generated 4,320 FTEs of direct employment, £230.1 million in direct labour compensation and £257.7 million in direct GVA in 2016 (Table 25).

<sup>88</sup>. The UK Games Map is available at: <https://gamesmap.uk>

<sup>89</sup>. Although this ratio was derived from survey data from outside the UK, the assumption is that the global nature of the video games development sector implies a congruence of business models and cost structures across peer jurisdictions such as the UK and Canada; data from Companies House and ONS were also considered, but it was determined that the ESAC source was the most reliable in this instance

<sup>90</sup>. Employment statistics published by BRES indicate that part-time employees in SIC 6201/1 (Ready-made interactive leisure and entertainment software development) indicate that part-time employees accounted for 6.5% of total employment. When these part-time employees are given a 50% weight, the implication is that the sector employs 0.97 FTEs for each employee

<sup>91</sup>. BFI, Statistical Yearbook 2018, Screen Sector Certification and Production



**Table 25**  
**Direct Economic Impact of VGTR-supported Video Games Development, 2016**

	Amount
Number of projects	228
UK spend (£m)	389.9
Employment (FTEs)	4,320
Labour compensation (£m)	230.1
GVA (£m)	257.7

Source: BFI and Olsberg•SPI/Nordicity estimates based on data from Ukie, Ortus, D&B and ABS

Notes:

1. Based on value of video games receiving Cultural Test final certification in 2016

## 6.3.2 Publishing

According to research by Ukie, in 2016 UK consumers spent over £3.10 billion on the purchase of video games – through both digital and physical sales.<sup>92</sup> As with the development sub-sector, the UK Games Map in combination with research conducted by Olsberg•SPI, Nordicity and Ortus was used to estimate the total employment, labour compensation and GVA in the publishing sub-sector:

- The UK Games Map provided a detailed list of companies engaged in video games publishing in the UK;
- Data provided by Ortus was combined with research conducted by Olsberg•SPI, Nordicity and Ukie to assign actual or estimated levels of employment and GVA to each company;
- These company-based data were aggregated to arrive at an estimate of 2,523 employees in the publishing sub-sector. This figure was converted to 2,300 FTEs using an FTE conversion factor of 0.91;<sup>93</sup>
- The average full-time salary in SIC 5821 (£47,325) was adjusted to account for social security costs to arrive at an average FTE cost of £53,525.<sup>94</sup> The total number of direct FTEs (2,300) was multiplied by the average FTE cost (£53,525) to estimate direct labour compensation of £123.1 million.
- These company-based data were aggregated to arrive at an estimate of £526.6 million in total GVA in 2016.

A title-by-title review of video games sales in the UK conducted by Ukie concluded that UK-made games accounted for a 17.3% market share. This market share was composed of a 14.9% share for UK-made games for physical sales, and an 18.2% share for digital sales, taken in proportion to their relative share of the marketplace. It was used to apportion total consumer sales between UK-made and non-UK titles, as well as the economic contribution created.

<sup>92</sup> <https://ukie.org.uk/news/2017/03/uk-games-market-worth-record-£433bn-2016>

<sup>93</sup> Employment statistics published by BRES indicate that part-time employees in SIC 58.21 (Publishing of computer games) accounted for 18% of total employment. When these part-time employees are given a 50% weighting, the implication is that the sector employs 0.91 FTEs for each employee.

<sup>94</sup> The average full-time salary in SIC 5821 was obtained from the Annual Survey of Employment and Hours (ASHE). The social security adjustment factor was obtained from employment cost statistics for SIC 5821 published in the Annual Business Survey (ABS).

The share of development spend associated with VGTR projects (31%) was used as a proxy to apportion the value of sales of UK-made titles between VGTR and non-VGTR video games. This ratio was applied to the 17.3% apportionment of games sales in the UK during 2016, to estimate the contribution of VGTR-supported titles within the publishing sector.

In 2016, VGTR titles accounted for 31% of development spend in the UK and £167.0 million in consumer sales in the UK. Within the publishing sub-sector, VGTR-supported video games therefore accounted for 120 FTEs of direct employment, £6.4 million in direct labour compensation and £28.4 million in direct GVA.

**Table 26**  
**Direct Economic Impact of UK-made Video Games in the Publishing Sub-sector in the UK, 2016**

	All UK-made video games	Non-VGTR	VGTR
Employment (FTEs)	400	280	<b>120</b>
Labour compensation (£m)	21.4	15.0	<b>6.4</b>
GVA (£m)	91.1	62.7	<b>28.4</b>

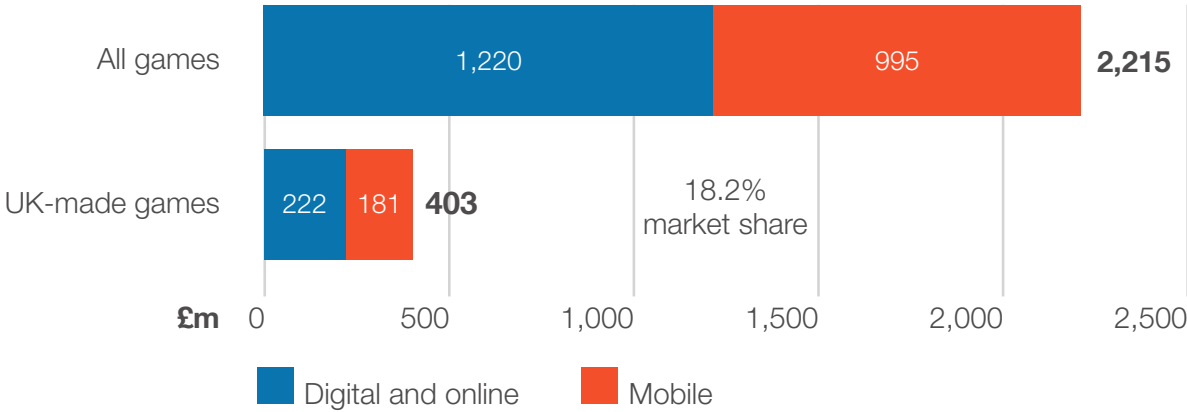
Source: Ukie, GfK, Kantar World Panel, Superdata, and Olsberg•SPI/Nordicity estimates based on data from Ukie, Ortus, D&B, GIC and ABS

### 6.3.3 Digital Retail

According to statistics published by Ukie and Superdata, UK consumers spent just over £2.20 billion on video games through digital channels in 2016. Ukie research shows that, of this, £1.22 billion was on online downloads and subscriptions (digital and online), and £995.0 million was on download-to-own apps and in-app purchases for mobile phones and tablets (mobile).<sup>95</sup>

The previously-established 18.2% market share figure for digital content was applied to these figures to estimate the UK share of this content. This indicated that £403.1 million of this was for UK-developed content, of which £222.0 million was digital and online, and £181.1 million mobile (Figure 24).

**Figure 24**  
**UK Consumer Spending on Digital Sales of Video Games, all Video Games vs. UK-made Video Games, 2016**



Source: Ukie and Superdata

To estimate the domestic impact of digital sales, employment data for certain small digital platform companies based in the UK was obtained along with data on the UK’s share of global workforce at the leading online global games platforms for which public financial information is readily available (e.g. Apple Inc., Alphabet Inc. [Google] and Amazon.com, Inc.).<sup>96 97</sup>

The results of this approach indicated that the digital sales of UK-made video games generated 60 FTEs of direct employment, £2.4 million in direct labour compensation and £5.8 million in direct GVA in 2016.<sup>98</sup>

Applying the 31% development spend ratio to these figures, it was found that VGTR-supported video games accounted for 20 FTEs of direct employment, £0.74 million in direct labour compensation and £1.8 million in direct GVA.

<sup>95.</sup> <https://ukie.org.uk/news/2017/03/uk-games-market-worth-record-£433bn-2016>  
<sup>96.</sup> Ukie indicated that GAME (online), Green Man Gaming, Fanatical and Stopto.net were all active in the digital platform market and employed a combined 105 persons  
<sup>97.</sup> Data from public financial reports published by the multinational companies and by Companies House indicated that – after adjusting for their respective shares of global games platform market – their UK operations accounted for 4.1% of their global workforce  
<sup>98.</sup> See Appendix 1 for estimates of the economic impact of all digital sales in the UK – including video games developed inside and outside the UK

**Table 27**  
**Direct Economic Impact of Digital Sales of UK-made Video Games in the UK, 2016**

	Total	Non-VGTR	VGTR
Sales (£m)	403.1	277.3	125.8
Employment (FTEs)	60	40	20
Labour compensation (£m)	2.4	1.7	0.7
GVA (£m)	5.8	4.0	1.8

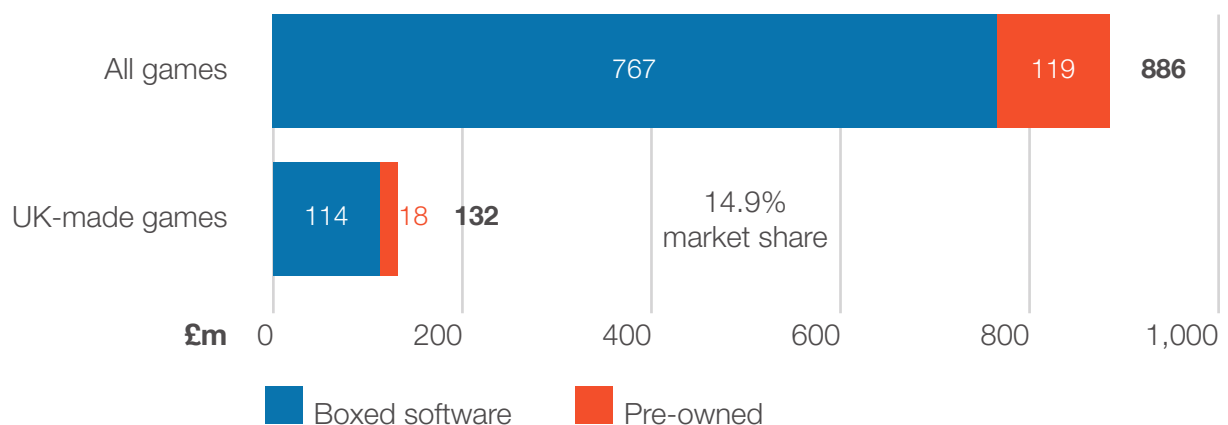
Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, Kantar World Panel, ABS and ASHE  
 Note: Figures may not sum to totals due to rounding

### 6.3.4 Physical Retail

In addition to this digital spend, data from Ukie, Kantar World Panel, and GfK show that £886.0 million was spent on physical sales of video games in the UK during 2016. These data show that £767.0 million was spent on new boxed software, and £119.0 million on pre-owned software.

The 14.9% physical market share ratio was applied to these figures, implying a UK market share of £132 million in the physical sales space, of which £114.0 million was on original, and £18.0 million on pre-owned content (Figure 25).

**Figure 25**  
**UK Consumer Spending on Physical Sales of Video Games, all Video Games vs. UK-made Video Games, 2016**



Source: Ukie, Kantar World Panel and GfK

In order to quantify the employment, labour compensation and GVA impacts resulting from digital sales of UK-made video games, the sales figures were analysed using the GVA-turnover ratios in SIC 47.63 (Retail sale of music and video recordings in specialised stores, for physical sales).

The results of this analysis indicated that the physical sales of UK-made video games generated 590 FTEs of direct employment, £12.9 million in direct labour compensation and £19.7 million in direct GVA in 2016.

Applying the 31% development spend ratio to these figures, it was found that VGTR-supported video games accounted for 180 FTEs of direct employment, £4.0 million in direct labour compensation and £6.1 million in direct GVA.

**Table 28**  
**Direct Economic Impact of Physical Sales of UK-made Video Games in the UK, 2016**

	Total	Non-VGTR	VGTR
Sales (£m)	132.0	90.8	41.2
Employment (FTEs)	590	410	180
Labour compensation (£m)	12.9	8.9	4.0
GVA (£m)	19.7	13.5	6.1

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS and ASHE  
Note: Figures may not sum to totals due to rounding

### 6.3.5 Corporate Investments and Acquisitions

Akin to the FTR and HETR-supported sectors, since the introduction of VGTR, UK games developers have become attractive to foreign investors. Between 2015 and 2017, high-profile examples of corporate investment in the UK Games sector – primarily from Chinese investors – amounted to approximately £1.75 billion.

**Table 29**  
**Recent High-Profile Investments in UK Games Companies**

Company	Investment (£m)
Jagex (March 2016)	235
Splash Damage (July 2016)	125
Outfit7 (January 2017)	890
Space Ape (May 2017)	44
Frontier (July 2017)	18
Improbable (March 2015-May 2017)	435
<b>Total</b>	<b>c.1.75bn</b>

Source: Olsberg•SPI/Nordicity analysis of media releases. Investment column refers to amounts announced publicly rather than final amounts invested, in 2018 GBP

### 6.3.6 Summary

Drawing these sub-sectors together, the direct value chain impact of VGTR-supported video games during 2016 was 4,640 FTEs of direct employment, £241.3 million in direct labour compensation and £294.1 million in direct GVA (Table 30).

**Table 30**  
**Summary of Direct Economic Impact of VGTR-supported Video Games throughout all parts of the Value Chain, 2016**

	Development	Publishing	Digital sales	Physical sales	Total
Employment (FTEs)	4,320	120	20	180	<b>4,640</b>
Labour compensation (£m)	230.1	6.4	0.7	4.0	<b>241.3</b>
GVA (£m)	257.7	28.4	1.8	6.1	<b>294.1</b>

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS, ASHE and ESAC  
Note: Figures may not sum to totals due to rounding

## 6.4 Total Economic Impact

As with other screen sectors analysed for this Study, the video games sector value chain generates additional economic impact through its purchases of goods and services (indirect impact), and the economic activity of its direct and indirect employees (induced impact).

To estimate the value of these impacts, a bespoke model was generated using Office for National Statistics (ONS) sales and use data. This model tracked the spending from the video games sector through the areas of the economy from which it makes purchases, allowing for the impact of this spending to be estimated. This approach also provided an estimate of the labour income arising from the purchases of goods and services, which was used to identify indirect impacts, through a modelling of consumer spending.<sup>99</sup>

The total economic impact is equal to the sum of the direct, indirect and induced impacts.

The analysis undertaken indicated that the total economic impact of VGTR-supported video games (including indirect and induced impacts) amounted to 9,170 FTEs of employment, £371.1 million in labour compensation and £522.1 million in GVA (Table 31).

<sup>99</sup>. Further details of this approach can be found in Appendix 4, sub-section 14.2

**Table 31****Total Economic Impact of VGTR-supported Video Games throughout the Value Chain, 2016**

		Development	Publishing	Digital sales	Physical sales	Total
Employment (FTEs)	Direct	4,320	120	20	180	<b>4,640</b>
	Indirect	2,260	340	10	100	<b>2,710</b>
	Induced	1,550	210	10	50	<b>1,820</b>
	<b>Total</b>	<b>8,130</b>	<b>670</b>	<b>40</b>	<b>330</b>	<b>9,170</b>
Labour compensation (£m)	Direct	230.1	6.4	0.7	4.0	<b>241.4</b>
	Indirect	66.1	11.4	0.3	2.6	<b>80.6</b>
	Induced	42.0	5.5	0.2	1.4	<b>49.2</b>
	<b>Total</b>	<b>338.3</b>	<b>23.4</b>	<b>1.3</b>	<b>8.1</b>	<b>371.1</b>
GVA (£m)	Direct	257.7	28.4	1.8	6.1	<b>294.1</b>
	Indirect	115.3	18.3	0.6	4.3	<b>138.5</b>
	Induced	76.5	10.1	0.4	2.5	<b>89.5</b>
	<b>Total</b>	<b>449.5</b>	<b>56.8</b>	<b>2.8</b>	<b>13.0</b>	<b>522.1</b>

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS and ASHE

Note: Figures may not sum to totals due to rounding.

## 6.5 Spillover Impacts

### 6.5.1 Merchandise

The major source of spillover impacts from video games, as in some of the other sectors, is to the retail sector via merchandise. Ukie publishes an annual valuation of the UK video games market which contains useful data which has assisted in calculating this impact.

In total, £100.6 million worth of video games-related merchandise was sold in the UK in 2016.<sup>100</sup> This total is a reduction on the 2013 figure of £196.9 million, but this may be accounted for by the cyclical nature of the sector and the maturation of the current generation of consoles. This total included:

- Children's spin-off toys and games: £66.8 million
- Books and magazines: £18.4 million
- Music and film: £7.8 million

In order to calculate the retail margin of this figure first the VGTR portion of these total merchandise sales was separated out. As noted in Section 6.3.2, UK-made video games accounted for a 17.3% share of the UK retail market in 2016; VGTR-supported titles accounted for an estimated 31% of UK-made games' market share. These shares imply that VGTR-supported titles accounted for 5.4% ( $17.3\% \times 31\% = 5.4\%$ ) of the total retail market, £5.4 million in merchandise sales.

<sup>100</sup> UK games market worth a record £4.33bn in 2016, Ukie (16th March, 2017), available at: <https://ukie.org.uk/news/2017/03/uk-games-market-worth-record-£433bn-2016>

The average retail margin for the UK of 30% was then applied to this proxy share to give estimated retail margin of £1.6 million. ONS-derived ratios for the retail sector were applied to this to assess other economic impact (including direct, indirect and induced impacts), resulting in an estimate of 40 FTEs, £1.9 million in GVA and £0.6 million in tax revenues.

## 6.5.2 Esports

Esports is a new, rapidly-growing element of the games sector, which involves the broadcast of games being played competitively with large prizes and audiences. It has expanded rapidly in recent years and is becoming an emerging but significant new component of the industry. However, in the context of this report, the economic benefits of esports are counted as a spillover from the video games sector.

In order to value the impact which this developing element has for the UK, Ukie provided headcount data for the esports teams and specialist companies operating in the UK, as well as the esports departments at companies such as Twitch and YouTube, which support the sector through online streaming. These data suggest that there are around 280 FTEs presently engaged directly within the esports element in the UK. Applying the 5.4% market share for VGTR-supported video games provides a VGTR figure for this of 20 FTEs.

In order to place a value on this, it is reasonable to assume that, at the moment, the business model for esports most closely resembles that of the sports industry – that is SIC 93.1 Sports activities. Therefore, the economic for SIC 93.1 were used to derive estimates of the economic impact of esports.

On this basis, the 10 FTEs are estimated to have generated £0.5 million in GVA, and £0.1 million in taxation during 2016. This is a modest contribution but important to keep track of, as esports is growing globally at a double-digit rate, and set to more than double worldwide revenues by 2019.

On this basis, the 20 FTEs directly employed in esports translates to £0.9 million in spending one esports and a total economic impact (i.e. including direct, indirect and induced impacts) of 30 FTEs and £1.0 million in GVA during 2016.



## 6.6 Overall Economic Contribution

Including these spillover effects, the overall economic contribution VGTR-supported video games amounted to 9,240 FTEs of employment, £525.0 million in overall GVA and £156.0 million in tax revenue in 2016.

**Table 32**  
**Summary of Overall Economic Contribution of VGTR-supported Video Games, 2016**

	Employment (FTEs)	GVA (£m)	Tax revenue (£m)
Total value chain impact	9,170	522.1	155.2
Spillover impacts:			
Merchandising	40	1.9	0.6
ESports	30	1.0	0.2
<b>Total economic impact</b>	<b>9,240</b>	<b>525.0</b>	<b>156.0</b>

## 6.7 Impact of the Tax Relief

Estimates of the tax revenues likely to have been generated by VGTR-supported video games development showed that in 2016, these video games generated £156.0 million in tax revenue, including £106.3 million in taxation related to direct impacts (including the VAT on physical sales), and £49.7 million from indirect and induced impacts.<sup>101</sup>

**Table 33**  
**Tax Revenue Generated by VGTR-supported Video Games, 2016**

	Development	Publishing	Digital sales	Physical sales	Total
VAT on sales	0	0	0	7.0	<b>7.0</b>
Direct	93.7	4.0	0.4	1.3	<b>99.3</b>
Indirect	24.9	4.2	0.1	1.0	<b>30.1</b>
Induced	16.0	2.1	0.1	0.5	<b>18.8</b>
Spillover	--	--	--	--	<b>0.8</b>
<b>Total</b>	<b>134.9</b>	<b>10.3</b>	<b>0.6</b>	<b>9.8</b>	<b>156.0</b>

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS, ASHE and ESAC

Note: Figures may not sum to totals due to rounding

According to the results of a survey undertaken for this project of 24 video games development projects that accessed VGTR in 2016, an estimated 37% of VGTR-supported development expenditures would have been spent in the UK in the absence of the tax relief. This means that 63% of the game development expenditures under VGTR are additional, and would not have occurred had the tax relief not been available.

<sup>101</sup>. See Appendix 4, Section 14.7 for details of tax revenue calculation

This additionality rate was applied to the development sub-sector, whilst other sub-sectors were discounted prior to the application of the rate, to reflect lower rates of net additionality.

Based on the additionality rates applied to the video games sub-sectors, it is estimated that the value chain for VGTR-supported video games generated an economic RoI of £4.00 in 2016. This means that for each pound that HM Government invested in the video games sector through VGTR generated £4.00 of additional GVA for the UK economy in 2016.

**Table 34**  
**VGTR RoI, 2013-16**

	2016
Total development expenditures (£m)	389.9
Tax relief outlays (£m) <sup>1</sup>	78.0
Overall economic contribution (£m)	525.0
<b>Additonal GVA (£m)</b>	<b>311.9</b>
<b>GVA RoI (£)<sup>2</sup></b>	<b>4.00</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, comScore, CRTG, public financial reports, Official Charts Company, BASE, ASHE, ESAC, ONS and HM Revenue

Notes:

1. Estimated at 20% of total expenditures.
2. The RoI is measured as pound returned per pound of tax relief and takes into account the net impacts and tax relief outlays in 2016 only.



# The Animation Programme Sector



## Differences compared to the 2015 edition of this Study

As with the previous edition of this analysis (the 2015 Study) the impact of animation programmes in the UK supported by Animation Tax Relief (ATR) has been undertaken. However, in order to provide a more complete analysis of the total UK animation sector, a wider assessment of the sector's value that includes all animated content produced within the various tax reliefs has been included (see Appendix 2). Note that this analysis relates only to animation production covered by screen sector tax reliefs and does not cover all animation programming produced, shown or distributed in the UK.

In undertaking this analysis, the approach has – as with the other sectors – been updated compared to the previous Study. This involves a bespoke economic model based on input-output (I-O) tables published by the Office for National Statistics (ONS), together with the use of conclusions from an analysis of job creation in the screen sectors, undertaken for the BFI's Research and Statistics Fund.

To facilitate comparison with previous years, all four years of ATR's operation have been analysed using this methodology, with results outlined in this section.

The reader should also note that Animation programmes have both a much longer production cycle (typically over two years) and a longer recoupment cycle than other forms of content, and as such it is likely more value will be generated from 2016 productions in future.

## 7.1 Context and Key Findings

The UK has a long tradition of animation production, which in recent years has seen projects such as *Sarah and Duck*, *Thomas and Friends*, and *Shaun the Sheep* achieve worldwide success. The value of such projects is demonstrated not only by their on-screen popularity, but also by their downstream value generation – not least through merchandising sales.

Despite this, at the time ATR was introduced in 2013, the television animation community in the UK was at a relatively low base, given the decreasing spend on animation production from broadcasters. Competition from other markets – in particular Canada, which utilises a labour tax credit model – had led both productions and talent to relocate.

The formulation of ATR reflects this market failure, as it is focused on supporting productions for television and online exhibition. Animated film production already had access to FTR, and animated film productions are therefore analysed in Section 4.<sup>102</sup> However, in order to facilitate an analysis of the animation sector as a whole, Appendix 2 analyses the value and impact of animation production through all of the screen sector tax reliefs.

Considering only the impact of ATR, production expenditure reached £97.1 million in 2016.<sup>103</sup> Throughout all of the value chain, ATR-supported content generated £100.7 million in direct GVA and 1,550 direct full-time equivalent (FTE) jobs. Including indirect and induced impacts, ATR-supported content generated £163.3 million in GVA and 2,810 FTEs.

Spillover impacts deliver significant value to the animation programme sector, particularly through merchandise sales. Adding in these effects, the overall economic contribution of ATR-supported content reached £354.8 million in GVA for 2016, supporting 7,120 FTEs.

ATR-related productions provided £4.44 in additional GVA for each pound of tax relief granted.<sup>104</sup>

<sup>102</sup>. As previously noted, in terms of terminology 'animation sector' is used to refer to the overall sector, including both ATR- and non-ATR production. 'Animation programme sector' is used to refer to the component of the sector that is eligible for ATR. This is preferred over 'animation television sector' because online animation is eligible for ATR, and ATR guidance references animation programmes.

<sup>103</sup>. Total ATR-supported spend in 2017 was £54.1 million

<sup>104</sup>. Data on the impact of ATR between 2013 and 2016 is included in Table 42

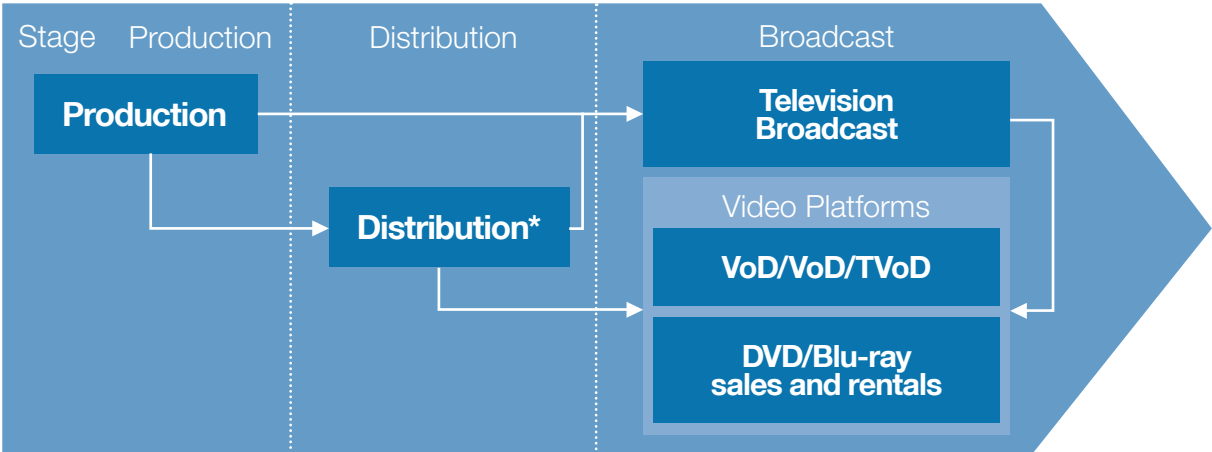
## 7.2 Value Chain Overview

As with the other screen sectors, the economic impact analysis takes a value chain approach to quantifying the value generated by ATR-supported production. This value chain is very similar to the other television sectors studied, and begins with a production stage at which producers conceive and develop the content. A team of animators and graphic artists then renders this into a final programme or series. As this is very labour intensive, it can take several years in total, with the production cycle for a single animated series often exceeding two years.

Animated programming also differs from live action in that it often involves the production of a large number of short episodes, which can be as brief as three to ten minutes in length. This contrasts with a live action programme, which in the HETV sector will rarely be shorter than 30 minutes (20-25 minutes on commercial television, after making an allowance for advertising).

As with HETV, the production company often engages with the broadcaster directly, without a distribution intermediary. However, distributors (or distribution functions within a production company) do play a role in managing international sales of content or sales to other video platforms. They may also assist with the management of intellectual property (IP) for use in other areas of the market, including merchandise.

**Figure 26**  
**Animation Programme Value Chain**



\*A distributor may or may not be involved, depending on the structure of the production

Other video platforms play a significant role within the animation programme sector. DVD/Blu-ray continues to be a major source of revenue for the sector, while video-on-demand (VoD) platforms play an increasing role. Both act either as a way of catching up on the viewing of already-broadcast content, or as the first window through which it is seen by a consumer.

Finally, and as noted in the 2015 Study, animation programmes also offer a much longer recoupment cycle to the other sectors studied.<sup>105</sup> Programmes are frequently dubbed into other languages and – especially in the children’s element of the market – the audience is constantly renewed as a new generation discovers previously-made content. Combined with the value of licensing and merchandise deals for successful series, it remains reasonable to anticipate that further downstream revenues will arise from ATR-supported production for many years to come.

<sup>105</sup> Economic Contribution of the UK’s Film, High-End TV, Video Game, and Animation Programming Sectors. Ibid

## 7.3 Direct Impact

### 7.3.1 Production

Statistics compiled by the BFI show that during 2016, £97.1 million was spent on the production of UK-qualifying animation programmes (Figure 27).<sup>106</sup> These expenditures included £38.3 million in inward investment and co-productions, and £58.8 million in UK domestic production.<sup>107</sup>

**Figure 27**

**UK Spend on Animation Programme Production, 2013-16 (£m)**



Source: BFI

To estimate the direct economic impact of this production expenditure, the total value of UK spend was converted to FTEs, labour compensation and GVA, by applying economic ratios derived from data collected through a survey of UK animation studios and from the Job Creation Model.<sup>108 109</sup>

<sup>106</sup> BFI Statistical Yearbook 2018, Screen Sector Production and Certification

<sup>107</sup> Ibid

<sup>108</sup> See appendix 4, section 14.1.4 for further information on this approach

<sup>109</sup> While the Job Creation Model did not cover animation programme production, some of the research and analysis of the VFX sector (which operates similar operating models) was applied to the animation programme production sector; further information on the Job Creation Model can be found in section 4.3.1

The survey indicated that each million pounds of UK spend generates £575,000 in labour compensation. Data from this research also indicated that the median salary within the sector was £37,160 in 2016, which translated into a median FTE cost of £42,280.<sup>110</sup> This median FTE cost implied that each million pounds of production spending generated 13.5 direct FTEs.

Research for the Job Creation Model indicated that each million pounds of spending on animation production generates £0.682m in direct GVA.<sup>111</sup>

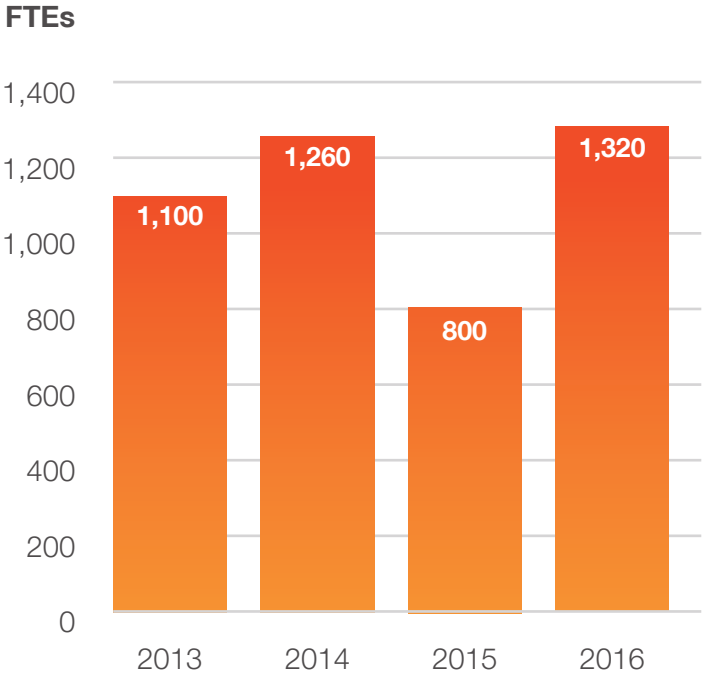
Based on these ratios, it was calculated that animation programme production generated 1,320 direct FTEs, £55.8 million in direct labour compensation, and £66.2 million in direct GVA in 2016 (Table 35).

**Table 35**  
**Direct Economic Impact of Animation Programme Production, 2016**

	Amount
UK spend (£m)	97.1
Employment (FTEs)	1,320
Labour compensation (£m)	55.8
GVA (£m)	66.2

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE  
Note: See Appendix 4, Section 14.1.4 for description of methodology

**Figure 28**  
**Direct Employment Generated by Animation Programme Production, 2013-16 (FTEs)**



Source: Nordicity/Olsberg•SPI estimates based on data from BFI, ABS and ASHE

<sup>110</sup> The median salary was multiplied by 1.138 to account for employers' NI costs  
<sup>111</sup> The estimate of operating surplus for VFX companies derived for the Job Creation Model was combined with the labour compensation ratio derived from the survey of animation studios to estimate the GVA ratio



## 7.3.2 Television Broadcast

When animation programmes are shown on television channels, value is generated for the UK economy, as economic activity is added over and above the labour, goods, and services related to the content. A proportion of the broader economic activity undertaken by the broadcaster is therefore attributable to the acquisition and transmission of ATR-supported content.

To ascertain this value, Attentional undertook an evaluation of audience share figures for animation programmes on UK television. This allowed the generation of an economic share for each ATR-related project, and attributed revenues based on estimated advertising revenues for this economic share. For BBC broadcasts, an equivalent advertising value was generated by comparing productions to their closest commercial counterpart.<sup>112</sup>

Attentional's analysis indicated that UK-qualifying animation programmes yielded an economic share of 0.56% of total television broadcast activity, and thereby generated an attributable revenue of £77.4 million on UK broadcast television in 2016 (Table 36). This attributable revenue generated 180 direct FTEs, £8.5 million in direct labour compensation and £27.9 million in direct GVA within the television broadcast sub-sector.

**Table 36**  
**Direct Economic Impact of Animation Programmes on UK Television, 2016**

	Amount
Economic share (%)	0.56
Attributable revenue (£m)	77.4
Employment (FTEs)	180
Labour compensation (£m)	8.5
GVA (£m)	27.9

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE  
Note: See Appendix 4, Sections 14.1.4 and 14.5 for methodology.

## 7.3.3 Distribution

As with the other screen sectors, the distribution of animation programmes can also generate economic activity within the UK, from the licencing of programming to broadcasters and to video platforms, as well as the licencing of IP for use in merchandising. This reflects the value-added activity undertaken by the distributor to sell the content, and administer the proceeds.

In order to estimate this, the economic share for the television broadcasting market (0.56%) was used as the base rate for ATR-supported programming's share of the content market. This was adjusted to take into account that not all genres of television programming (e.g. news) are subject to distribution, raising the economic share of ATR-supported programming to 0.95%.<sup>113</sup> This adjusted economic share was applied on a pro-rata basis to the totals for employment, labour compensation and GVA in the ONS dataset for SIC 59.13/3, Television programme distribution activities.

<sup>112</sup> See Appendix 4, Section 14.5 for description of methodology

<sup>113</sup> Details of this approach can be found in Appendix 4, Section 14.6.1

This analysis indicated that the distribution of animation programmes generated an estimated £12.5 million of revenue within the distribution sub-sector in 2016 (Table 37). Such attributable revenues were responsible for 10 direct FTEs, £500,000 in direct labour compensation, and £2.6 million in direct GVA.

**Table 37**  
**Direct Economic Impact of Distribution of Animation Programmes, 2016**

	<b>Amount</b>
Economic share television broadcast market (%)	<b>0.56</b>
Economic share of television distribution market (%)	<b>0.95</b>
Attributable revenue (£m)	<b>8.7</b>
Employment (FTEs)	<b>10</b>
Labour compensation (£m)	<b>0.5</b>
GVA (£m)	<b>2.6</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE

Note: See Appendix 4, Sections 14.1.4 and 14.6.1 for methodology

### 7.3.4 Video Platforms

In keeping with the approach for the other television-based screen sectors, the portion of economic activity on video platforms was also estimated with reference to an adjusted economic share for animation programmes. This reflects the marginal value added associated with the labour, goods, and services required to place the content on such platforms.

As with the distribution sub-sector, this analysis started with the use of the economic share in television broadcast as a proxy. In this case, the economic share was adjusted from 0.56% to 1.5% to reflect the fact that certain genres predominate audience viewing on video platforms, in relation to broadcast television.<sup>114</sup>

This adjusted economic share was applied to ONS data for SIC 47.63, Retail sale of music and video recordings in specialised stores for physical sales, and data on major platforms for VoD to estimate the economic contribution of ATR-supported programming to the video platforms element of this sub-sector.

Based on this approach, animation programmes generated 40 direct FTEs, £1.6 million in direct labour compensation and £4.0 million in direct GVA in 2016 (Table 38).

<sup>114</sup> This approach is detailed in Appendix 4, Section 14.6

**Table 38**  
**Direct Economic Impact of Animation Programmes on Video Platforms, 2016**

	Value of animation programmes (£m)	Employment (FTEs)	Labor compensation (£m)	GVA (£m)
Physical video	4.9	20	0.5	0.8
Digital video†	14.9	20	1.1	3.2
<b>Total</b>	<b>19.8</b>	<b>40</b>	<b>1.6</b>	<b>4.0</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, I.H.S., ABS, CRTC, public financial reports, Official Charts Company, BASE, ASHE

Note: See Appendix 4, Sections 14.1.4 and 14.6.2 for methodology

† Includes VoD/SVoD/TVoD

### 7.3.5 Summary

The estimates of economic activity across these parts of the value chain were brought together to estimate the total value chain impact of the animation programme sector.

This shows that in 2016, ATR-supported animation programmes generated 1,550 FTEs of direct employment, £66.5 million in direct labour compensation and £100.7 million in direct GVA (Table 39).

**Table 39**  
**Summary of Direct Economic Impact of Animation Programmes throughout all parts of the Value Chain, 2016**

	Production	Distribution	Television broadcast	Video platforms*	Total
Employment (FTEs)	1,320	10	180	40	<b>1,550</b>
Labour compensation (£m)	55.8	0.5	8.5	1.6	<b>66.5</b>
GVA (£m)	66.2	2.6	27.9	4.0	<b>100.7</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE

Note: Figures may not sum to totals due to rounding. See Appendix 4, Section 14.1.4 for methodology

\* Includes physical video sales and rentals, and VoD/SVoD/TVoD

## 7.4 Total Economic Impact

As with the other sectors, indirect and induced impacts were estimated through the use of a bespoke model based on ONS I-O tables. These enable an estimate of how the animation programme sector value chain generates additional economic impact through its purchases of goods and services (indirect impact), and the economic activity of its direct and indirect employees (induced impact).

In order to estimate indirect effects, data from production budgets were used to identify the goods and services which an ATR-supported production makes in the sectors which supply it; these were categorised per the industry categories in the ONS I-O tables. The impact of these purchases was modelled industry by industry, to identify the incremental employment, labour compensation, and GVA which would be generated, using the ONS tables to identify the connections between the various sectors of the UK economy.<sup>115</sup>

Following this work, observations of the average ratio of Type II and Type I multipliers in the UK economy were used as the basis to calculate induced impacts. This saw a 1.25 multiplier used, reflecting previous work by Oxford Economics and the Scottish Government.<sup>116</sup> The induced impacts calculated through this multiplier were added to the direct and indirect impacts to estimate the total economic impact throughout the value chain.

This model indicated that animation programmes generated a total economic impact (including indirect and induced impacts) of 2,810 FTEs of employment. £99.5 million in labour compensation and £163.3 million in GVA (Table 40).

**Table 40**  
**Total Economic Impact Generated by Animation Programmes throughout all parts of the Value Chain, 2016**

		Production	Distribution	Television broadcast	Video platforms†	Total
Employment (FTEs)	Direct	1,320	10	180	40	<b>1,550</b>
	Indirect	570	40	130	30	<b>770</b>
	Induced	380	10	60	30	<b>490</b>
	<b>Total</b>	<b>2,270</b>	<b>70</b>	<b>370</b>	<b>100</b>	<b>2,810</b>
Labour compensation (£m)	Direct	55.8	0.5	8.5	1.6	<b>66.5</b>
	Indirect	14.1	1.2	3.9	0.9	<b>20.1</b>
	Induced	10.3	0.4	1.6	0.6	<b>12.9</b>
	<b>Total</b>	<b>80.2</b>	<b>2.2</b>	<b>14.0</b>	<b>3.1</b>	<b>99.5</b>
GVA (£m)	Direct	66.2	2.6	27.9	4.0	<b>100.7</b>
	Indirect	27.7	2.2	7.6	1.5	<b>39.1</b>
	Induced	18.7	0.8	2.9	1.1	<b>23.5</b>
	<b>Total</b>	<b>112.6</b>	<b>5.7</b>	<b>38.4</b>	<b>6.6</b>	<b>163.3</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, CRTIC, public financial reports and ASHE

Note: Figures may not sum to totals due to rounding. See Appendix 4, Section 14.2 for methodology

† Includes physical video sales and rentals, and VoD/SVoD/TVoD

<sup>115</sup> This approach is detailed in Appendix 4, Section 14.2

<sup>116</sup> Type I multipliers allow the conversion of economic output into direct and indirect outputs; Type II multipliers include induced outputs. A full explanation of this approach, and the use of multipliers, can be found in Appendix 4, Section 14.2

## 7.5 Time Series Statistics

As a new methodology has been used to identify the economic impacts arising from activity supported by ATR in this Study, a direct comparison with the 2015 Study was not feasible. In order to facilitate such a comparison, the impact of spending from 2013 (the first year of ATR) to the present was estimated using the new methodology. This has taken an identical approach to that described in previous sections, with results in Table 41.

**Table 41**  
**Time Series Impact Data, ATR-supported Programming throughout all parts of the Value Chain, 2013-16**

		2013	2014	2015	2016
Employment (FTEs)	Direct	1,260	1,530	1,030	1,550
	Indirect	610	730	520	770
	Induced	390	460	330	490
	<b>Total</b>	<b>2,260</b>	<b>2,720</b>	<b>1,880</b>	<b>2,810</b>
Labour compensation (£m)	Direct	53.1	62.9	43.7	66.5
	Indirect	15.9	18.5	13.6	20.1
	Induced	10.1	12.0	8.5	12.9
	<b>Total</b>	<b>79.1</b>	<b>93.4</b>	<b>65.7</b>	<b>99.5</b>
GVA (£m)	Direct	81.2	93.7	71.7	100.7
	Indirect	30.9	36.0	26.4	39.1
	Induced	18.5	21.8	15.4	23.5
	<b>Total</b>	<b>130.6</b>	<b>151.6</b>	<b>113.5</b>	<b>163.3</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, CRTC, public financial reports, Official Charts Company, BASE and ASHE

Note: Figures may not sum to totals due to rounding

## 7.6 Spillover Impacts

### 7.6.1 Merchandise

Merchandising is a crucial component of the animation programme sector and is responsible for a significant proportion of associated IP value. The spillover impacts of this in terms of economic impact onto the retail sector are likely to be large. However, they are difficult to measure – after the two giants of the sector, *Peppa Pig* and *Thomas and Friends*, there is a long tail of other medium sized and smaller brands such as *In The Night Garden*.

In order to update this analysis, the same growth rate of animation programme production was used as a proxy to update the merchandise impacts calculated in the 2015 Study.<sup>117</sup> This is a conservative approach, but a sensible one to take given the paucity of available data from these brands. For example, while it is important to note that *Peppa Pig* in particular has undergone even stronger growth in the last 3 years, and is targeting US\$2 billion by the end of the decade, the available data do not allow the apportioning of such worldwide revenues into the value generated by UK rights-holders.

The approach taken results in an estimate of £560 million in merchandise spending.

This generates a total economic impact (i.e. including direct, indirect and induced impacts) of 4,310 FTEs, £91.5 million in GVA and £58.7 million in tax revenue.

As with the previous data, a caveat on these findings is that this represents impacts from brands with long histories and several seasons, only the most recent of which will have had access to the ATR. Although more recent content is most likely to have generated recent sales, it still stands to reason that theoretically only a portion of this impact may be attributable to any one year, and therefore directly related to the tax relief.

Given the scale of the merchandising sector in the UK and overseas, it is also likely that this is a significant underestimate. However, in the absence of better data on the impact of branded revenues from ATR-supported productions, no improvement to this is feasible.

As a result of these challenges, the merchandise spillovers identified are not included in the impact calculation below.

### 7.6.2 Tourism

There are also likely to be significant spillover economic benefits to the tourism sector from animation programmes. It has, though, not proven possible to estimate these, as two largest likely sources of revenue from this sector – theme parks related to *Peppa Pig*, *Thomas and Friends* and *CBeebies* – do not release visitor data. No reasonable basis to estimate the impact of this spillover effect through other approaches was identified.

However, based on audience ratings and continued expansions of both parks, it is likely that growth is strong and profitable with significant employment.

<sup>117</sup> A question on revenues from branded merchandising was asked as part of the survey of Animation companies - this did not yield sufficient data to be able to alter the approach; companies spoken to advised that due to confidentiality clauses in their contracts with merchandising companies, they were unable to share this data with Olsberg•SPI and Nordicity

## 7.7 Overall Economic Contribution

Including these spillover impacts, the overall economic contribution of ATR programme production in 2016 amounted to 7,120 FTEs of employment, £354.8 million in GVA and £107.1 million in tax revenue (Table 42).

**Table 42**  
**Summary of Overall Economic Contribution of the UK Animation Programme Sector, 2016**

	Employment (FTEs)	GVA (£m)	Tax revenue (£m)
Total economic impact	2,810	163.3	48.4
Spillover impacts:			
Merchandising	4,310	191.5	58.7
<b>Overall economic contribution</b>	<b>7,120</b>	<b>354.8</b>	<b>107.1</b>

## 7.8 Impact of the Tax Relief

In order to calculate the impact of ATR, it was first necessary to estimate the taxation revenues arising from the activity the tax relief supports.

This analysis shows that ATR-supported production generated an estimated £107.1 million in tax revenue in 2016, including £3.4 million in VAT on sales of DVD/Blu-rays and digital transactions and subscriptions, and £103.8 million in other taxes (e.g. Income Tax, National Insurance Contributions and Corporation Tax).<sup>118</sup>

**Table 43**  
**HM Treasury Revenue Generated by Animation Programmes, 2013-16**

	2013 (£m)	2014 (£m)	2015 (£m)	2016 (£m)
Direct VAT	2.1	2.3	3.0	3.4
Direct	26.1	30.1	23.1	32.3
Indirect	6.2	7.2	5.3	7.9
Induced	3.9	4.6	3.2	4.9
Spillover	27.7	33.8	35.4	58.7
<b>Total</b>	<b>65.9</b>	<b>78.0</b>	<b>70.0</b>	<b>107.1</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, comScore, CRTS, public financial reports, Official Charts Company, BASE, ASHE, ONS and HM Revenue

Note: Figures may not sum to totals due to rounding. See Appendix 4, Section 14.1.4 for methodology

<sup>118</sup> See Appendix 4, Section 14.7 for details of tax revenue calculation

In order to assess the impact of the ATR, a survey of production companies was conducted to ascertain the portion of animation programme production that would have occurred in the absence of the ATR. This allowed the calculation of a rate of additionality applicable to the existing level of ATR-supported production. This survey research indicated an additionality rate of 70%.

This additionality rate was applied to the production sub-sector, whilst other sectors were discounted to reflect lower anticipated additionality rates.<sup>119</sup>

Based on the additionality rates applied to each of the sub-sectors, ATR outlays in 2016 yielded a RoI of £4.44 in terms of GVA. This means that each pound of ATR yielded £4.44 of GVA for the UK economy in 2016.

**Table 44**  
**ATR RoI, 2013-16**

	2013	2014	2015	2016
Total expenditures	76.2	92.8	58.5	97.1
Tax relief outlays <sup>1</sup>	15.2	18.6	11.7	19.4
Overall economic contribution (£m)	220.8	261.8	228.9	354.8
Additional GVA (£m)	68.6	82.4	53.8	86.3
<b>GVA RoI (£)<sup>2</sup></b>	<b>4.50</b>	<b>4.44</b>	<b>4.60</b>	<b>4.44</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, comScore, CRTIC, public financial reports, Official Charts Company, BASE, ASHE, ONS and HM Revenue

Notes:

1. Estimated at 20% of total expenditures.

2. The RoI is measured as pound returned per £1 of tax relief and takes into account the net impacts and tax relief outlays in the specific year

<sup>119</sup>. See Appendix 4, Section 14.4 for details





# The Children's Television Sector

8

## Differences compared to the 2015 edition of this Study

At the time of the previous edition of this analysis in 2015 Children's Television Tax Relief (CTR) had not yet become available. This Study therefore represents the first analysis of the impact that the tax relief has had on the sector.

## 8.1 Context and Key Findings

The UK has a long tradition of producing high-quality, impactful children's television, with titles ranging from *Horrible Histories*, *Hank Zipzer* and *The Worst Witch*.

However, since the abolition of the quota system for children's content on commercial television in the 2003 Communications Act financing in the sector has become increasingly difficult.<sup>120</sup> The resulting challenges in generating culturally relevant content led to the introduction of CTR in the spring of 2015. It is therefore a new area of analysis for this Study.

In 2016, the CTR supported £61.0 million of UK spend across 61 projects.

The value chain supported 800 direct full-time equivalent (FTE) jobs, and generated £41.1 million in GVA. Including indirect and induced impacts, this increases to 1,540 FTEs of employment, with £78.2 million in contributions to national GDP.

Productions supported by CTR in 2016 generated £2.73 in GVA for each pound of relief granted.

## 8.2 Value Chain Overview

In keeping with the other sectors of study, a value chain approach to the children's television sector has been taken to analyse the impact of content produced through CTR. This is functionally very similar to that found for HETV and animation programmes, reflecting the way in which these sectors operate.

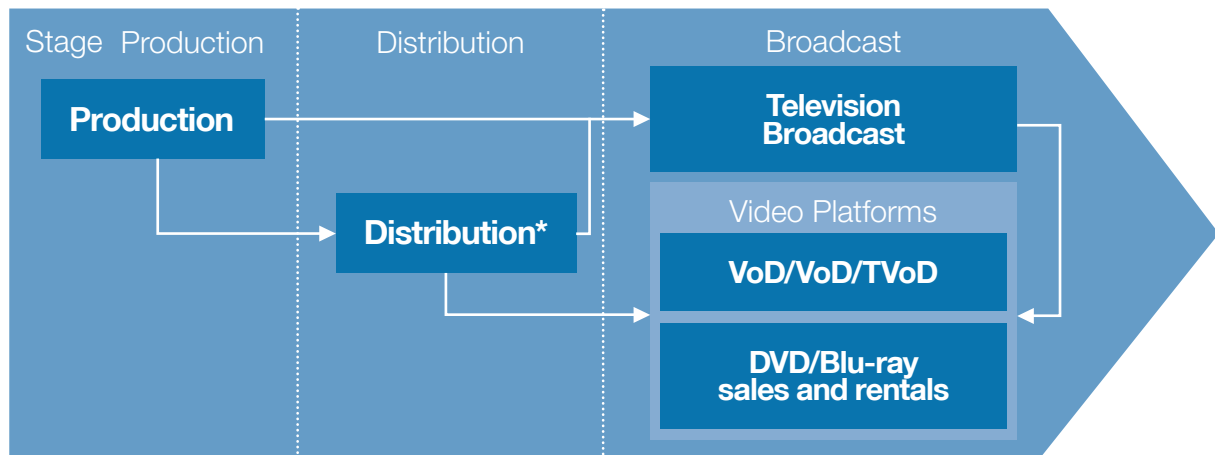
As with these other television sectors, the children's television value chain begins with the conception and development of a project by the production company. This is then filmed and packaged for distribution to the market.<sup>121</sup> Normally, such content is produced directly for a broadcaster, with no intermediary between this and the production stage. While this is not a requirement of CTR, it is the case for all the content which availed of the tax relief in 2016.

Whereas broadcasters are ordinarily the primary customers for this content, it has value in downstream windows such as video-on-demand (VoD) platforms and the DVD/Blu-ray market, and will often also be sold into foreign markets for television broadcast. Distributors take the role of selling the content into these further markets and windows (Figure 29). As with the animation programme sector, these markets and windows continue to provide a valuable source of additional revenue, whether from DVD sales, digital transactions or sales to subscription video-on-demand (SVoD) platforms such as Netflix and Amazon, which curate libraries of content suitable (and often securely ring fenced) for younger audiences.

<sup>120</sup> Evidence suggests that there has been a 93% fall in investment in first-run, UK-originated children's content on commercial services since the quotas were cut. Broadcasters to be forced to invest more in British-made children's TV programmes. Ibid

<sup>121</sup> Eligible projects for CTR must be at least 51% live action, though animated content and other mixed media are also frequently used within children's programming

**Figure 29**  
**Children’s Television Programme Value Chain**



\*A distributor may or may not be involved, depending on the structure of the production

As with the animation programme sector, the audience for children’s television can reinvent itself as new generations discover content. This can generate significant ongoing value for the rights holder through the video platforms element, but in general has a lesser impact in generating a long tail, as live-action content can become dated much more quickly than its animated counterparts. This is exemplified by *The Worst Witch*, which was originally made in 1998 for ITV, and was remade from 2017 onwards for the BBC, Netflix, and ZDF.

## 8.3 Direct Impact

### 8.3.1 Production

As with the other production sectors, the Job Creation Model was also utilised to ascertain FTEs, labour compensation and GVA generated through investment in children’s television production. This model, produced as part of a separate study, analyses the relationship between production spending, genre, and labour creation.<sup>122</sup> By using the relationships indicated in this Study, the impacts of production spending supported by CTR can be estimated.

This model indicated that each million pounds of CTR production generated 12.6 direct FTEs, £0.49 million in direct labour compensation and £0.59 million in direct GVA.

In 2016, a total of 61 CTR-supported projects were made, incurring a total UK spend of £61.0 million. Based on the data from the Job Creation Model, it can be calculated that this production spend generated 770 FTEs in direct employment, £30.0 million in direct labour compensation and £36.1 million in direct GVA (Table 45).

<sup>122</sup> This study will be published in Autumn 2018; further information on the Job Creation Model can be found in section 4.3.1

**Table 45**  
**Direct Economic Impact of CTR Production, 2016**

	Amount
Number of projects	61
UK spend (£m)	61.0
Employment (FTEs)	770
Labour compensation (£m)	30.0
GVA (£m)	36.1

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, ABS, ASHE.  
 Note: See Appendix 4, Section 14.1.6 for description of methodologies and assumptions

### 8.3.2 Television Broadcast

Akin to the other screen sectors covered in this Study, when CTR-supported children’s television content is broadcast, it generates added economic value for the UK over and above the labour required at UK broadcasters to deliver the content to consumers. This represents a fraction of the total value added within broadcasters through the activities of acquiring content and managing such transmissions.

To calculate the marginal impact of such activity within the television broadcasting part of the value chain, an economic share was calculated by Attentional, using viewing data for the productions in receipt of CTR, and the estimated advertising spend they would achieve. This model takes into account the sector of the advertising market which the programme targets, and produces an economic share, which is taken forward as a proxy for the proportion of broadcaster turnover for which the supported content is responsible.

In the case of content originally broadcast on the BBC – for which a direct advertising spend would be inappropriate – a further step was taken. This saw Attentional draw a comparison between each BBC-broadcast programme and its closest commercial equivalent, to generate an estimated advertising value had the programme been commercially broadcast.<sup>123 124</sup>

The results of Attentional’s analysis pointed to an economic share of 0.08% for CTR-supported content in the television broadcast market. This implies that UK broadcasters earned an estimated £11.1 million of revenue which was attributable to CTR in 2016 (Table 46). This revenue supported 30 FTEs in employment, £1.2 million in labour compensation, and £4.0 million in GVA.

<sup>123</sup>. As the BBC was by far the predominant acquirer of CTR-supported content in 2016, few commercial proxies were available, which has served to depress the estimates from this model

<sup>124</sup>. This approach is detailed in Appendix 4, Section 14.5

**Table 46**  
**Direct Economic Impact of CTR-supported Content on UK Television, 2016**

	Amount
Economic share	0.08%
Attributable revenue (£m)	11.1
Employment (FTEs)	30
Labour compensation (£m)	1.2
GVA (£m)	4.0

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE  
 Note: See Appendix 4, Sections 14.1.6 and 14.5 for description of methodologies and assumptions

### 8.3.3 Distribution

As with the other sectors considered for this Study, CTR-supported productions generate economic impact through distribution. In order to calculate the impact of CTR-supported content through this sub-sector, the economic share established by Attentional was used.

As not all television genres are subject to distribution, this economic share was amended, with genres such as news which do not generate economic impacts within this part of the value chain being removed. This resulted in an adjusted economic share of 0.14%, which was applied to a pro-rata share of activity in SIC 59.13/3, Television programme distribution activities – the element of the Annual Business Survey (ABS) dataset within which this economic activity took place.

This analysis showed that CTR-supported productions generated £1.3 million in attributable revenue for distributors in 2016 (Table 47). This provided £80,000 in direct labour compensation and £380,000 in direct GVA, but supported fewer than 10 FTE employees.

**Table 47**  
**Direct Economic Impact of Distribution of CTR, 2016**

	Amount
Economic share television broadcast market (%)	0.08
Adjusted economic share of television distribution market (%)	0.14
Attributable revenue (£m)	1.3
Employment (FTEs)	<10
Labour compensation (£m)	0.1
GVA (£m)	0.4

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE  
 Note: See Appendix 4, Sections 14.1.6 and 14.5 for description of methodologies and assumptions

Given the early-stage nature of this incentive, relatively few productions have yet received it, and in comparison with other sectors such as HETV, relatively limited back catalogues of CTR-supported content exist. This is likely to change in future, which may serve to increase the value generated in this sub-sector when this analysis is repeated.

### 8.3.4 Video Platforms

In order to estimate the impact of CTR-supported production on video platforms, a similar approach to that for distribution was taken, with the Attentional economic share for broadcast being used as the basis for the calculation. In this case, the economic share in the television market was adjusted from 0.08% to 0.24% to reflect the fact that certain genres predominate consumer purchases and audience viewing on video platforms, in relation to broadcast television viewing. This calculation takes into account both sales of DVDs and Blu-rays in the UK, and the programming generally available on VoD, SVoD, and download to own (DTO) services.<sup>125</sup>

This adjusted economic share was applied to SIC 47.63 – Retail sale of music and video recordings in specialised stores for physical sales – and published data on the operations of major VoD platforms, such as Netflix and Amazon. Based on this approach, it is calculated that CTR-supported productions accounted for fewer than 10 FTEs of employment in the video platforms sub-sector in 2016, £260,000 in direct labour compensation and £640,000 of GVA (Table 47).

**Table 48**  
**Direct Economic Impact of CTR on Video Platforms, 2016**

	Revenue value of CTR (£m)	Employment (FTEs)	Labor compensation (£m)	GVA (£m)
DVD sales and rentals	0.8	<10	0.08	0.12
VoD/SVoD/TVoD	2.5	<10	0.18	0.52
<b>Total</b>	<b>3.8</b>	<b>&lt;10</b>	<b>0.26</b>	<b>0.64</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, I.H.S., ABS, CRTC, public financial reports, Official Charts Company, BASE, ASHE

Note: See Appendix 4, Sections 14.1.6 and 14.6.2 for description of methodologies and assumptions

<sup>125</sup> This approach is detailed in Appendix 4, Section 14.6

### 8.3.5 Summary

Bringing the analysis of these sub-sectors together indicates that the total value chain impact of CTR-supported productions in 2016 was equal to 800 FTEs of employment, £31.5 million in direct labour compensation and £41.1 million in GVA (Table 49).

**Table 49**  
**Direct Economic Impact Generated by CTR-supported Productions throughout all parts of the Value Chain, 2016**

	Production	Distribution	Television broadcast	Video platforms <sup>†</sup>	Total
Employment (FTEs)	770	<10	30	<10	800
Labour compensation (£m)	30.0	0.1	1.2	0.3	31.5
GVA (£m)	36.1	0.4	4.0	0.6	41.1

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE

Note: Figures may not sum to totals due to rounding

<sup>†</sup> Includes DVD sales and rentals, and VoD/SVoD/TVoD

## 8.4 Total Economic Impact

As with the other sectors, multiplier effects were estimated through the use of a bespoke model based on Office for National Statistics (ONS) input-output (I-O) tables. These enable an estimate of how the children's television sector value chain generates additional economic impact through its purchases of goods and services (indirect impact), and the economic activity of its direct and indirect employees (induced impact).

In order to estimate indirect effects, data from production budgets were used to identify the goods and services which a CTR-supported production makes in the sectors which supply it; these were categorised per the industry categories in the ONS I-O tables. The impact of these purchases was modelled industry by industry, to identify the incremental employment, labour compensation, and GVA which would be generated, using the ONS tables to identify the connections between the various sectors of the UK economy.

Following this work, observations of the average ratio of Type II and Type I multipliers in the UK economy were used as the basis to calculate induced impacts. This saw a 1.25 multiplier used, reflecting previous work by Oxford Economics and the Scottish Government.<sup>126</sup> The induced impacts calculated through this multiplier were added to the direct and indirect impacts to estimate total multiplier effects throughout the value chain.

This modelling shows that CTR-supported productions generated 420 FTEs of indirect and induced employment in 2016, bringing total value chain employment impacts to 850 FTEs (Table 50). These employees received £10.8 million in multiplier effects labour compensation, for a total of £28.1 million. CTR-supported projects also generated indirect and induced impact GVA of £20.5 million, for total GVA of £44.5 million as a result.

<sup>126</sup> Type I multipliers allow the conversion of economic output into direct and indirect outputs; Type II multipliers include induced outputs. A full explanation of this approach, and the use of multipliers, can be found in Appendix 4, Section 14.2



**Table 50****Total Economic Impact Generated by CTR throughout all parts of the Value Chain, 2016**

		Production	Distribution	Television broadcast	Video platforms <sup>†</sup>	Total
Employment (FTEs)	Direct	770	<10	30	<10	<b>800</b>
	Indirect	420	10	20	<10	<b>450</b>
	Induced	260	<10	10	<10	<b>270</b>
	<b>Total</b>	<b>1,450</b>	<b>10</b>	<b>60</b>	<b>20</b>	<b>1,520</b>
Labour compensation (£m)	Direct	30.0	0.1	1.2	0.3	<b>31.5</b>
	Indirect	11.3	0.2	0.6	0.2	<b>12.1</b>
	Induced	7.0	0.1	0.2	0.1	<b>7.4</b>
	<b>Total</b>	<b>48.2</b>	<b>0.3</b>	<b>2.0</b>	<b>0.6</b>	<b>51.1</b>
GVA (£m)	Direct	36.1	0.4	4.0	0.7	<b>41.0</b>
	Indirect	21.8	0.3	1.1	0.3	<b>23.5</b>
	Induced	12.8	0.1	0.4	0.2	<b>13.5</b>
	<b>Total</b>	<b>70.7</b>	<b>0.8</b>	<b>5.5</b>	<b>1.1</b>	<b>78.2</b>

Source: Olsberg+SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE

Note: Figures may not sum to totals due to rounding. See Appendix 4, Section 14.2 for description of methodologies and assumptions  
<sup>†</sup> Includes DVD sales and rentals, and VoD/SVoD/TVoD

## 8.5 Spillover Impacts

No data or consultations identified any spillover impacts from CTR-supported programming to date. As this is an early-stage tax relief, and such spillover impacts often take several years to manifest, it is likely that such impacts have begun but will not be calculable until at least the next revision of this Study.

## 8.6 Overall Economic Contribution

As no spillovers have been identified, the overall economic contribution is the same as total economic impact across the value chain (see Section 8.4).

## 8.7 Impact of the Tax Relief

The activity of CTR-supported productions generated an estimated £30.6 million in tax revenue in 2016, including over £0.6 million in VAT on sales of DVDs and digital transactions and subscriptions, and £30.0 million in other taxes (e.g., Income Tax, National Insurance Contributions and Corporation Tax).<sup>127</sup>

<sup>127</sup> See Appendix 4, Section 14.7 for details of tax revenue calculation

**Table 51**  
**HM Treasury Revenue Generated by CTR and the CTR value chain, 2016**

	2016 Revenues (£m)
Direct VAT	0.6
Direct	22.0
Indirect	5.1
Induced	3.0
<b>Total</b>	<b>30.6</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, comScore, CRTC, public financial reports, Official Charts Company, BASE, ASHE, ONS and HM Revenue

Note: Figures may not sum to totals due to rounding

In order to assess the impact of CTR, modelling was undertaken in relation to how the total economic contribution of the core UK children's production sector would change in its absence. The data for this was collected through a survey of children's television producers, which indicated that the gross rate of additionality was 46%; i.e., in the absence of CTR, production spend on supported content in the UK would be 46% lower.

This additionality rate was applied to the production sub-sector, whilst other sub-sectors were discounted prior to the additionality calculation.<sup>128</sup>

Based on the additionality rates applied to each of the sub-sectors, HM Government's outlays on CTR in 2016 yielded a RoI of £2.73 in GVA terms. This means that each pound of CTR generated £2.73 of economic activity for the UK economy which would not otherwise have existed.

**Table 52**  
**CTR RoI, 2016**

	2016
Total expenditures (£m)	61.0
Tax relief outlays (£m) <sup>1</sup>	12.2
Overall economic contribution (£m)	78.2
<b>Additonal GVA (£m)</b>	<b>33.2</b>
<b>GVA RoI (£)<sup>2</sup></b>	<b>2.73</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, IDBR, BRES, CAA, comScore, CRTC, public financial reports, Official Charts Company, BASE, ASHE, ONS and HM Revenue

Notes:

1. Estimated at 20% of total expenditures.
2. The RoI is measured as pounds per £1 of tax relief and takes into account the net impacts and tax relief outlays in 2016.

<sup>128</sup>. See Appendix 4, Section 14.4 for details



# The VFX Sector

9

## About this Section

Given the importance of the VFX sector to the UK, this Study evaluates the value of this sector as a separate part of the production sub-sector for the first time. In order to do this, a survey of VFX production companies was used to identify their turnover from all screen sectors, both within the various tax reliefs, and in non-tax relief sectors such as commercial production.

The value of the whole VFX sector, including non-tax relief related work is presented in Appendix 3, whilst this chapter confines its analysis to the importance of VFX within the various tax reliefs.

Consequently, the value identified in this chapter should therefore be considered as an attempt to separately identify the value generated within these tax relief by the UK's VFX companies.

As a result of this approach, the results presented below should not be added to those in the other sections. Instead, they should be considered a different way of considering the data presented in this Study.

## 9.1 Context, Key Findings, and Relationship to Other Sectors

The VFX sector is a key part of the UK's screen sector value chain for both film and HETV driven by increasing audience expectations as the technology makes the seemingly impossible possible by means of digital manipulation of the image. Studios such as Double Negative and Framestore have been responsible for key visual sequences on many innovative and highly significant productions. This is exemplified by *Gravity*, which director Alfonso Cuarón stated could not have been made without “cutting edge technology developed by British artists”.<sup>129</sup>

Furthermore, in the most recent changes to the FTR, the minimum spend in the UK lowered from 25% of budget to 10%, to attract additional spending through the tax relief from productions not carrying out every aspect of the production process, e.g. principal photography, in the UK. This reflects EU State Aid rules, which prohibit the establishment of an incentive on a single part of the film-making process, which VFX is considered in these rules to be.

Despite this importance to the success of the UK screen sectors, historically VFX has been dealt with only as a supplier sector in previous versions of this study. For the first time, this Study has analysed the VFX sector as a core sector in its own right, identifying the role it plays in supporting a variety of screen sector production, as well as its economic contribution outside the tax reliefs.

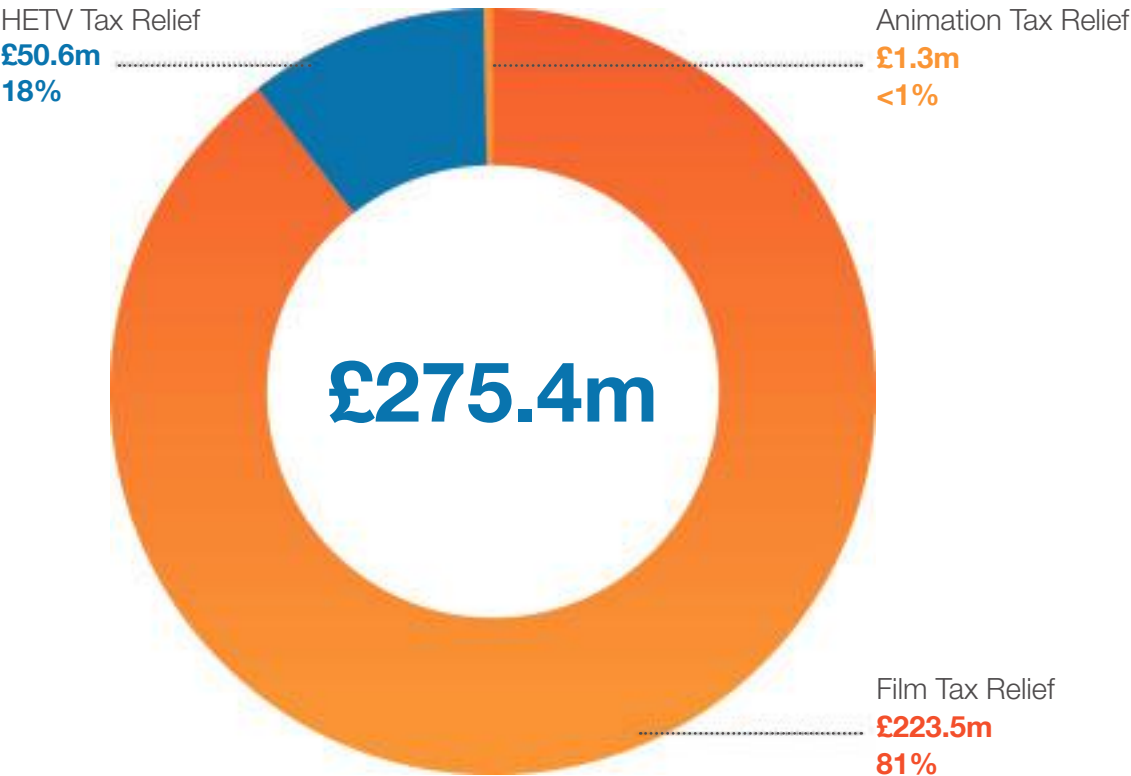
<sup>129</sup> Oscars: Director Alfonso Cuarón hails Gravity's UK origins but will it win big at the Academy Awards? Walker, D., in “The Mirror” (28th February, 2014)

## 9.2 Direct Impact

A survey of VFX studios in the UK was undertaken to establish spending within the sector in 2016. This included questions which enabled the estimation of which tax relief was used to support the output of this VFX work, and how much was not reliant on any tax relief.

This analysis concludes that £275.4m was spent on VFX on tax relief supported productions in 2016 (Figure 30). Film Tax Relief (FTR) was the largest proportion of this, with FTR-related production accounting for £223.5 million (81%) of this. Projects supported by High-End Television Tax Relief (HETVR) accounted for £50.6 million (18%); Animation Programme Tax Relief productions accounted for £1.3 million (<1%). No VFX production was reported for Children's Television Tax Relief.

**Figure 30**  
**Total Spending on VFX Services for Film and Television Production in the UK (£m), 2016**

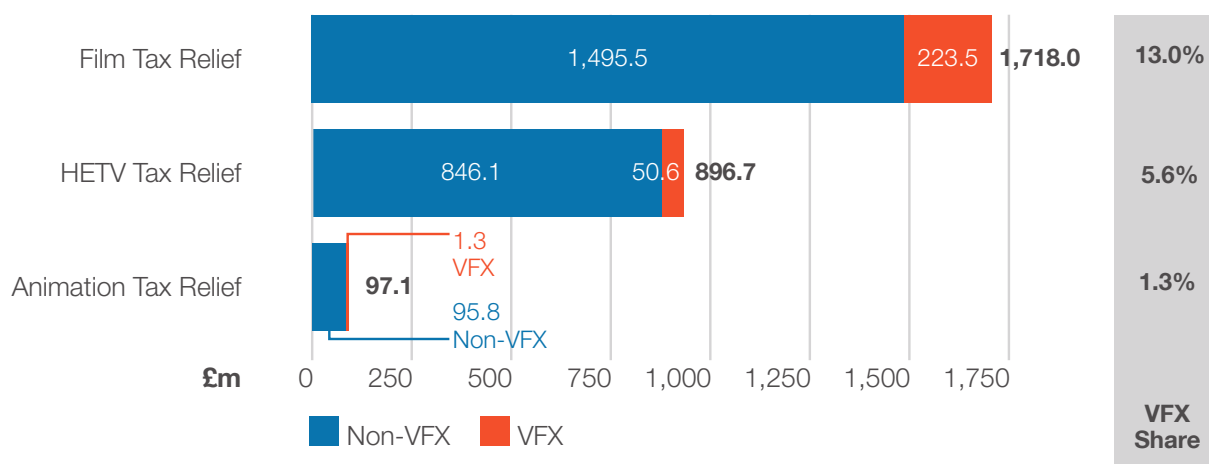


Source: Olsberg•SPI/Nordicity estimates based on data from 2017 survey of VFX companies

Notes:  
Excludes any revenue earned by VFX companies from video or audio post-production services  
Excludes any spending on VFX services for commercials and other video products

These data imply that 13.0% of FTR-related, 5.6% of HETVR-related and 1.3% of ATR-related expenditures in 2016 were on VFX (Figure 31).

**Figure 31**  
**VFX Spend as a Share of Total UK Spend, by Tax Relief, 2016 (£m)**



Source: Olsberg•SPI /Nordicity estimates based on data from BFI and 2017 survey of VFX companies

Note: Animation Programme Tax Relief (£1.2m VFX spend). CTR (£0 VFX spend) not shown in chart

Using the Job Creation Model, total VFX production expenditure figures were analysed to estimate the value and impact of spending from each relevant fiscal tax relief through the VFX sector. This analysis shows that VFX-related film and television production supported 4,390 full-time equivalent (FTE) jobs in 2016, and generated £230.2 million in GVA for the UK economy (Table 53).

**Table 53**  
**Direct Economic Impact of VFX Production within the Tax Reliefs, 2016**

	VFX spend (£m)	Employment (FTEs)	Labour compensation (£m)	GVA (£m)
Film Tax Relief projects	223.5	3,560	162.9	186.8
HETV Tax Relief projects	50.6	810	36.9	42.3
Animation Programme Tax Relief projects	1.3	20	0.9	1.1
Children's Television Tax Relief projects	0.0	0	0.0	0.0
<b>Total</b>	<b>272.3</b>	<b>4,390</b>	<b>200.8</b>	<b>230.2</b>

Source: Olsberg•SPI /Nordicity estimates based on data from 2017 survey of VFX companies

Notes:

Figures may not sum to totals due to rounding.

Excludes any revenue earned by VFX companies from video or audio post-production services.

Excludes any spending on VFX services for commercials and other video products.

## 9.3 Total Economic Impact Across Value Chain (Tax Relief-Supported)

Spending through the VFX sector generates indirect impacts through its purchases of goods and services from other sectors, and induced impacts through the re-spending of wages by direct and indirect employees. To estimate the value of these indirect and induced impacts, a bespoke model was generated through this analysis of the ONS I-O tables.

This model indicates that the VFX sector generated a total economic impact of 6,120 FTEs of employment, £245.8 million in labour compensation and £315.1 million in GVA (Table 54).

**Table 54**  
**Total Economic Impact Generated by VFX Production in the UK within the Tax Reliefs 2016**

	Direct	Indirect	Induced	Total
Employment (FTEs)	4,390	830	900	<b>6,120</b>
Labour compensation (£m)	200.8	20.7	24.4	<b>245.8</b>
GVA (£m)	230.2	40.5	44.4	<b>315.1</b>

Source: Olsberg•SPI/Nordicity estimates based on data from the BFI, ABS, ASHE and 2017 survey of VFX companies  
Note: Figures may not sum to totals due to rounding

The data established in the various screen sectors through this Study were used to apportion the direct, indirect and induced impacts of VFX spending through the value chains for the tax relief sectors. Based on this apportioning exercise, the total value chain impact of VFX production in the UK was 8,870 FTEs of employment, £333.4 million in labour compensation and £609.0 million in GVA during 2016 (Table 55).<sup>130</sup>

**Table 55**  
**Total Economic Impact Across the Screen Sector Value Chain Attributable to UK-made VFX Content, 2016**

	Production	Distribution	Cinema exhibition	Television broadcast	Video Platforms†	Total
Employment (FTEs)	6,120	950	1,070	360	370	<b>8,870</b>
Labour compensation (£m)	245.8	39.2	24.7	13.7	10.1	<b>333.4</b>
GVA (£m)	315.1	185.1	52.0	37.6	19.1	<b>609.0</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Ofcom, ABS I.H.S., ABS, CRTIC, public financial reports, Official Charts Company, BASE, ASHE and 2017 survey of VFX companies

Note: Figures may not sum to totals due to rounding

† Includes physical video (i.e. DVD sales and rentals), and digital video (i.e. VoD/SVoD/TVoD)

<sup>130</sup>. As these figures are derived from the production sectors above, they should not be added to other figures, as this would lead to double-counting, and an inflated total figure



Table 56 presents the overall economic contribution of VFX across the various sectors and sub-sectors, inclusive of the portion of the spillover impacts in the film, HETV and television animation programme sector attributable to VFX. Including spillover effects, the total economic impact of VFX was 12,720 FTEs of employment and £773.9 million in GVA.

**Table 56**  
**Overall Economic Contribution (including spillover impacts) Across the Screen Sector Value Chain Attributable to UK-made VFX Content, 2016**

	Production	Distribution	Cinema exhibition	Television broadcast	Video platforms <sup>†</sup>	Spillover effects	Total
Employment (FTEs)	6,120	950	1,070	360	370	3,850	<b>12,720</b>
GVA (£m)	315.1	185.1	52.0	37.6	19.1	165.0	<b>773.9</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Ofcom, ABS I.H.S., ABS, CRTIC, public financial reports, Official Charts Company, BASE, ASHE and 2017 survey of VFX companies

Note: Figures may not sum to totals due to rounding

† Includes physical video (i.e. DVD sales and rentals), and digital video (i.e. VoD/SVoD/TVoD)

# Conclusions

10

## 10.1 Total Economic Impact

While the global screen sectors continue to undergo a period of significant change – not least in the shifting links between content and audiences – the UK remains a vibrant international screen hub. In a highly competitive market, its screen sectors have a proven ability to create strong, innovative products that attain success, acclaim, and attention on a global scale.

For international investors and producers, the UK continues to be an attractive location to produce highly ambitious work.

The introduction of the various tax reliefs has seen highly significant growth in several of these sectors, with others at a comparatively early stage of development. Tax relief for the screen sectors make a highly significant contribution to the UK economy across employment, GVA and tax revenue.

**Table 57**  
**Summary of Total Economic Impact of Screen Sector Activity in receipt of Tax Relief in 2016**

	Employment (FTEs)	GVA (£m)	Tax revenue (£m)
Direct impact	48,330	3,667.4	1,020.4
Indirect Impact	32,820	1,696.4	344.7
Induced impact	19,260	937.9	218.9
<b>Overall economic impact</b>	<b>100,410</b>	<b>6,311.8</b>	<b>1,584.0</b>

Within the film sector, the broad trends continue to be positive. Despite financing challenges for UK independent producers, the UK's film sector overall continues to grow and its economic impact in 2016 reached a new high. This is supported by ongoing substantial private investment in facilities, including studio infrastructure, which has spread from a core in the South East of England to the whole of the UK, with further projects proposed.

The HETR-supported television sector will also benefit from such facilities, and while its production spend dipped slightly in 2016, this continues to be a major UK success story.<sup>131</sup> This sector has expanded rapidly since the introduction of the relief, and provides a new source of UK stories seen around the world, generating value in a globally-competitive market.

While VGTR-supported video games spend remains a small part of the sector in the UK, this element of the wider sector nonetheless provides significant value. Despite the early stage of its implementation, VGTR-supported video games already provide 4,640 direct full-time equivalent (FTE) jobs, and tax relief-supported products in the sector generate a positive return to HM Treasury.

In the ATR-supported sector, the signs continue to be of stabilisation; in a sector which was struggling prior to the introduction of the incentive, international engagement is growing, which is a positive sign. The CTR-supported sector is further behind, having only been introduced more recently, but is already generating strong returns.<sup>132</sup>

<sup>131</sup>. This dip was followed by major growth to £984.6 million UK spend in 2017

<sup>132</sup>. Further analysis of the Games, Animation, and VFX sectors are presented in the appendices below

### 10.1.1 Productivity: GVA per FTE

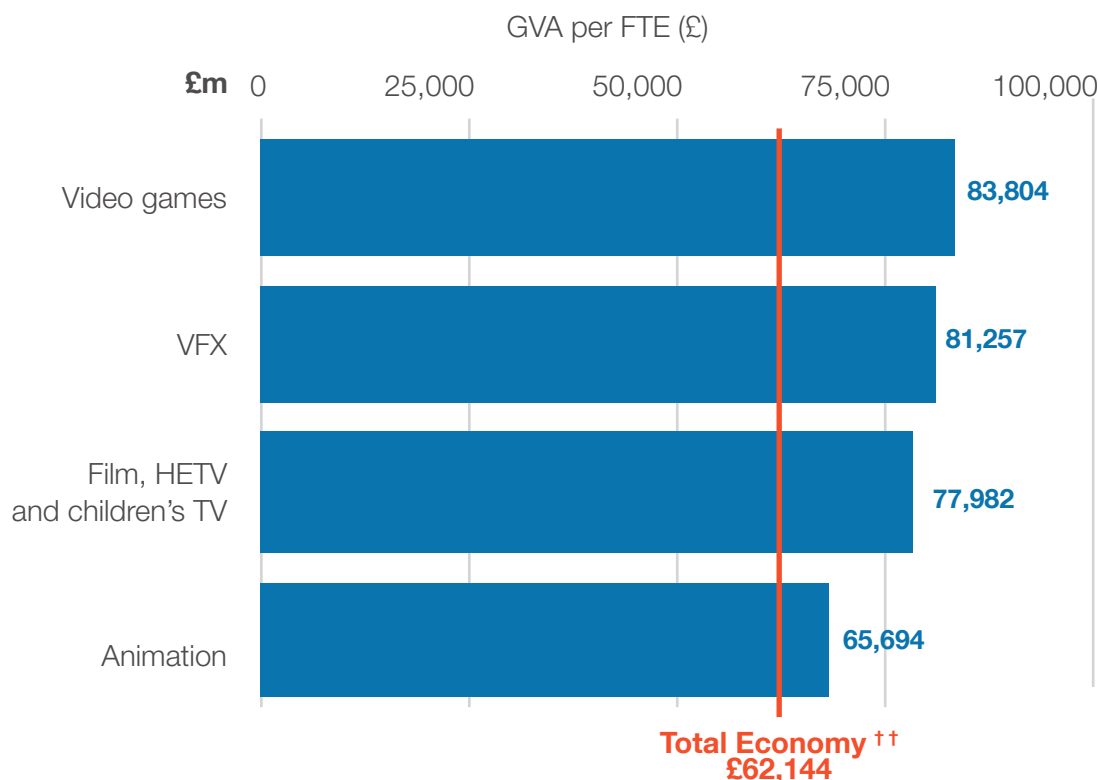
As part of this study, an analysis of the relative productivity in the screen sectors has been requested; GVA per FTE provides one measure for assessing this. Figure 32 presents this measure for “content creation” in the screen sectors and compares it to the average GVA per FTE in the UK economy.

In order to provide the most comparable measure of productivity, the GVA per FTE for the screen sectors has been arrived at by combining the GVA and employment in the production and distribution sub-sectors; for video games, the development and publishing sub-sectors were combined. This approach is necessary in order to fully capture the commercial and economic value of content creation.

The screen sectors differ from most sectors of the economy in that the monetisation of the product is typically done through a legal entity (i.e. the distribution or publishing company) that is separate from the legal entity that manufactured the content. In order to assess the productivity of the screen sector on an equivalent basis to other sectors of the economy, the production/development and distribution/publishing sub-sectors should be viewed as a single sector that manufactures and monetises screen content.

Figure 32 shows that all of the screen sectors displayed GVA per FTE that was higher than the average across the UK economy in 2016 (£62,144). The highest productivity was in video games (£83,804), followed by VFX (£81,257), live action film, HETV and children’s TV (£77,982), and animation (£65,694).

**Figure 32**  
**Productivity in the screen sectors and the UK economy, GVA per FTE (£)<sup>†</sup>**



Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, I.H.S., ABS, CRTIC, public financial reports, Official Charts Company, BASE, ASHE, Ukie, Superdata, GfK, Kantar World Panel, survey of animation companies, survey of VFX companies and ONS.

**Notes:**

† To measure GVA per FTE in the screen sectors, the GVA and employment in the production and distribution sub-sectors were combined. For video games, the GVA and employment in the development and publishing sub-sectors were combined.  
 †† ONS reports that the average GVA per job was £52,626 in 2016. This average GVA per job was based on 32,856,047 jobs, or total GVA of £1,729.1b. ONS statistics also indicate that 26.9% of the workforce work part-time, and that, on average, part-time workers work 43% of the time worked by full-time workers. In other words, each part-time worker was equal to 0.43 FTEs. These statistics imply that the number of FTEs employed in the UK economy is equal to 84.7% of the number of workers ( $73\% + 26.9\% \times 43\% = 84.7\%$ ), and therefore, the average GVA per FTE is equal to 1.181 times ( $1 \div 84.7\% = 1.181$ ) the average GVA per job or £62,144 ( $£52,626 \times 1.181 \approx £62,144$ ).

## 10.2 Spillover Impacts

Aside from the direct, indirect, and induced impacts generated by incentive supported production and development in the UK, there is a wide range of spillover impacts which can be tied back to the sectors in question. These spillover impacts generated 36,930 FTEs, £1.59 billion in GVA and £459.5 million in tax revenue during 2016, bringing the total to 137,340 FTEs, £7.91 billion in GVA and £2.04 billion in tax revenue.

**Table 58**  
**Summary of Spillover Impacts from all Tax Relief Sectors, 2016**

	Employment (FTEs)	GVA (£m)	Tax revenue (£m)
UK brand promotion	10,500	403.0	90.0
Merchandise sales	6,970	294.3	90.2
Tourism	19,430	896.1	279.1
Esports	30	1.0	0.2
<b>Total</b>	<b>36,930</b>	<b>1,594.4</b>	<b>459.5</b>

## 10.3 Overall Economic Contribution

Bringing together all of the impacts noted, a single picture of the economic contribution of the screen sectors supported by the screen sector tax reliefs in 2016 is presented below.

**Table 59**  
**Summary of Overall Economic Contribution Associated with Tax Reliefs, 2016<sup>133</sup>**

		Employment (FTEs)	GVA (£m)	Tax revenue (£m)
Direct impact	Film	28,250	2,458.5	619.7
	High-End Television	13,090	783.0	236.2
	Video Games	4,640	294.1	106.3
	Animation Programmes	1,550	100.7	35.7
	Children's Television	800	41.1	22.5
<b>Total Direct Impact</b>		<b>48,330</b>	<b>3,677.4</b>	<b>1,020.4</b>
Indirect and Induced Impacts	Film	31,900	1,640.3	348.2
	High-End Television	13,580	666.5	145.7
	Video Games	4,530	228.0	48.9
	Animation Programmes	1,260	62.6	12.8
	Children's Television	720	37.0	8.1
	Indirect and Induced impact	52,080	2,634.4	563.6
<b>Total Value Chain Impact</b>		<b>100,410</b>	<b>6,311.8</b>	<b>1,584.0</b>
Spillover Impacts	UK brand promotion	10,500	403.0	90.0
	Merchandise sales	6,970	294.3	90.2
	Tourism	19,430	896.1	279.1
	Esports	30	1.0	0.2
<b>Overall Impact</b>		<b>137,340</b>	<b>7,906.2</b>	<b>2,043.5</b>

<sup>133</sup>. This does not include non-tax relief impacts for the video games and VFX sectors



# Appendix 1

## Total Video Games Sector Impact





As noted in Section 6, the VGTR-supported video games sector in the UK represents only a sub-set of current activity. In order to provide a full picture of the impact of video games development in the UK, an exercise has been undertaken to estimate the total economic contribution, which is presented below.

## 11.1 Direct Impact

### 11.1.1 Development

To estimate the total value of spending, employment, labour compensation and GVA in the development sub-sector, data from Ukie's UK Games Map was combined with research conducted by Ortus Economic Research (Ortus), additional research from Ukie, and the results of video games sector research conducted by Nordicity for the Entertainment Software Association of Canada (ESAC).

- The UK Games Map provided a detailed list of companies engaged in video games development in the UK;<sup>134</sup>
- Data provided by Ortus Economic Research was combined with research conducted by Olsberg•SPI, Nordicity and Ukie to assign actual or estimated levels of employment and GVA to each company;
- These company-based statistics were aggregated to arrive at an estimate of £826.0 million in total GVA in 2016;
- Survey research conducted for the Entertainment Software Association of Canada (ESAC) indicated that the average GVA-to-turnover ratio among Canadian video games developers in 2016 was 0.66.<sup>135</sup> Based on this ratio, overall revenue in the UK's development sub-sector was an estimated £1.25 billion in 2016;
- The ESAC research also indicated that labour compensation accounted for 89.3% of GVA in the development sub-sector. Based on this observation, total labour compensation in the UK's video games development sub-sector £737.6 million in 2016.

The UK Games Map and the associated company research conducted by Ortus, Ukie, Olsberg•SPI and Nordicity also indicated that development companies in the UK employed 14,306 persons in 2016. This total employment was converted to FTEs using a FTE conversion factor of 0.97<sup>136</sup> in total, therefore, video games development generated an estimated 13,840 FTEs of direct employment in 2016.

Based on statistics published by BFI, an estimated £389.9 million was spent in the UK in 2016 on the development of 228 video games supported by the VGTR in 2016.<sup>137</sup> This spend represented 31% of the total estimated turnover of UK video games development companies in 2016.

<sup>134</sup>. UK Games Map available at: <https://gamesmap.uk>

<sup>135</sup>. Although this ratio was derived from survey data from outside the UK, the assumption is that the global nature of the video games development sector implies a congruence of business models and cost structures in across peer jurisdictions such as the UK and Canada.

<sup>136</sup>. Employment statistics published by BRES indicate that part-time employees in SIC 6201/1 (Ready-made interactive leisure and entertainment software development) indicate that part-time employees accounted for 6.5% of total employment. When these part-time employees are given a 50% weight, the implication is that the sector employs 0.97 FTEs for each employee.

<sup>137</sup>. BFI Statistical Yearbook, Screen Sector Certification and Production, 2018

The direct economic contribution generated by the development of VGTR titles and other UK-made video games was estimated, respectively, by applying their pro-rata shares of total development spend to the estimates of total employment, labour compensation and GVA across all video games development companies. The results of this pro-rata allocation are presented in Table 60.

**Table 60**  
**Direct Economic Impact of Video Games Development in the UK, 2016**

	VGTR	Other UK made video games	Total
UK spend/turnover (£m)	389.9	859.7	<b>1,249.6</b>
Share of spend/turnover	31%	69%	<b>100%</b>
Employment (FTEs)	4,320	9,520	<b>13,840</b>
Labour compensation (£m)	230.1	507.5	<b>737.6</b>
GVA (£m)	257.7	568.3	<b>826.0</b>

Source: BFI and Olsberg•SPI/Nordicity estimates based on data from Ukie, Ortus, D&B, ASHE and ABS  
Includes a mark-up of 48% to account for administration, marketing and other non-core activities at video games development companies

## 11.1.2 Publishing

According to Ukie's research, in 2016, UK consumers spent over £3.10 billion on the purchase of video games – through both digital and physical sales.<sup>138</sup> As with the development sub-sector, the UK Games Map in combination with research conducted by Olsberg•SPI, Nordicity and Ortus was used to estimate the total employment, labour compensation and GVA in the publishing sub-sector.

- The UK Games Map provided a detailed list of companies engaged in video games publishing in the UK;
- Data provided by Ortus Economic Research was combined with research conducted by Olsberg•SPI, Nordicity and Ukie to assign actual or estimated levels of employment and GVA to each company;
- These company-based statistics were aggregated to arrive at an estimate of 2,523 employees in the publishing sub-sector. This figure was converted to 2,300 FTEs using an FTE conversion factor of 0.91;
- The average full-time salary in SIC 5821 (£47,325) was adjusted to account for social security costs to arrive at an average FTE cost of £53,525.<sup>139</sup> The total number of direct FTEs (2,300) was multiplied by the average FTE cost (£53,525) to estimate direct labour compensation of £123.1 million.
- These company-based statistics were aggregated to arrive at an estimate of £526.6 million in total GVA in 2016;

<sup>138</sup>. UK games market worth a record £4.33bn in 2016, Ukie (16th March, 2017), available at: <https://ukie.org.uk/news/2017/03/uk-games-market-worth-record-£433bn-2016>

<sup>139</sup>. The average full-time salary in SIC 5821 was obtained from the Annual Survey of Employment and Hours (ASHE). The social security adjustment factor was obtained from employment cost statistics for SIC 5821 published in the Annual Business Survey (ABS).

A title-by-title review of video games sales in the UK conducted by Ukie concluded that UK-made video games had an overall market share of 17.3% across the digital and physical sales parts of the value chain. This estimated revenue market share (17.3%) was used to apportion total consumer sales between UK-made and non-UK titles, as well as the economic contribution.

In 2016, therefore, UK-made video games accounted for £535.1 million in consumer sales. Within the publishing sub-sector, UK-made video games accounted for 400 FTEs of direct employment, £21.4 million in direct labour compensation and £91.1 million in direct GVA.

The share of total development spend accounted for by VGTR projects was used to apportion the value of sales of UK-made titles between VGTR and non-VGTR video games. The economic contribution of UK-made titles was, in turn, apportioned based on this apportioning of the value of sales.

In 2016, VGTR titles accounted for 31% of total development spend in the UK and £167.0 million in consumer sales. Within the publishing sub-sector, VGTR video games accounted for 120 FTEs of direct employment, £6.4 million in direct labour compensation and £28.4 million in direct GVA.

**Table 61**  
**Direct Economic Impact of Video Games Publishing in the UK, 2016**

	UK-made video games			Non-UK video games	Total
	VGTR	Other UK-made video games	Sub-total		
Consumer sales in UK (£m)	167.0	368.2	535.1	2,565.9	<b>3,101.0</b>
Employment (FTEs)	120	280	400	1,900	<b>2,300</b>
Labour compensation (£m)	6.4	15.0	21.4	101.7	<b>123.1</b>
GVA (£m)	28.4	62.7	91.1	435.5	<b>526.6</b>

Source: Ukie, GfK, Kantar World Panel, Superdata, and Olsberg•SPI/Nordicity estimates based on data from Ukie, Ortus, D&B, ASHE and ABS

Note: Figures may not sum to totals due to rounding.

### 11.1.3 Digital Retail

The digital sales of video games generated £2.21 billion in consumer sales in the UK in 2016. On a global basis, these digital sales generated 4,730 FTEs of direct employment, £206.0 million in direct labour compensation and £494.4 million in direct GVA. However, as the vast majority of digital distribution platforms are based outside of the UK, we estimate that only a small portion of this global impact occurs within the UK.

To estimate the domestic impact of digital sales, employment data for a number of small digital platform companies based in the UK<sup>140</sup> was obtained along with data on the UK's share of global workforce at the leading online global games platforms for which public financial information is readily available (e.g. Apple Inc., Alphabet Inc. [Google] and Amazon.com, Inc.).<sup>141</sup>

Based on this approach, digital sales generated 310 FTEs of direct employment, £13.2 million in labour compensation and £31.7 million in direct GVA (Table 62). Of this total, UK-made video games accounted for £403.1 million in sales, 60 FTEs of direct employment, £2.4 million in labour compensation and £5.8 million in direct GVA.

**Table 62**  
**Direct Economic Impact of Digital Sales of Video Games in the UK, 2016**

	UK-made video games			Non-UK video games	Total
	VGTR	Other UK-made video games	Sub-total		
Consumer sales in UK (£m)	125.8	277.3	403.1	1,811.9	<b>2,215</b>
Employment (FTEs)	20	40	60	250	<b>310</b>
Labour compensation (£m)	0.7	1.7	2.4	10.8	<b>13.2</b>
GVA (£m)	1.8	4.0	5.8	25.9	<b>31.7</b>

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS and ASHE  
Note: Figures may not sum to totals due to rounding

<sup>140</sup>. Data supplied by Ukie indicated that GAME (online), Green Man Gaming, Fanatical and Stopto.net were all active in the digital platform market and employed a combined 105 persons.

<sup>141</sup>. Data from public financial reports published by the multinational companies and by Companies House indicated that – after adjusting for their respective shares of global games platform market – their UK operations accounted for 4.1% of their global workforce.

### 11.1.4 Physical Retail

The physical sales of video games generated £886.0 million in consumer sales in the UK in 2016. These physical sales, in turn, generated 3,980 FTEs of direct employment, £86.8 million in labour compensation and £132.0 million in direct GVA (Table 63).

Of this total, UK-made video games accounted for an estimated £132.0 million in sales, 590 FTEs of direct employment, £12.9 million in labour compensation and £19.7 million in direct GVA.

**Table 63**  
**Direct Economic Impact of Physical Sales of Video Games in the UK, 2016**

	UK-made video games			Non-UK video games	Total
	VGTR	Other UK-made video games	Sub-total		
Consumer sales in UK (£m)	41.2	90.8	132.0	754.0	<b>886</b>
Employment (FTEs)	180	410	590	3,390	<b>3,980</b>
Labour compensation (£m)	4.0	8.9	12.9	73.9	<b>86.8</b>
GVA (£m)	6.1	13.5	19.7	112.3	<b>132.0</b>

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS and ASHE

## 11.1.5 Summary

Summing these together, all UK-developed video games during 2016 are estimated to have generated 14,890 FTEs of direct employment, £774.3 million in direct labour compensation and £942.6 million in direct GVA (Table 64). This includes only the publishing value related to UK-made content.

**Table 64**  
**Summary of Direct Economic Impact of UK-made Video Games throughout all parts of the Value Chain, 2016**

	Develop-ment	Publish-ing	Digital sales	Physical sales	Total
Employment (FTEs)	13,840	400	60	590	<b>14,890</b>
Labour compensation (£m)	737.6	21.4	2.4	12.9	<b>774.3</b>
GVA (£m)	826.0	91.1	5.8	19.7	<b>942.6</b>

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS and ASHE

Summing these sub-sectors together, all video games developed, published or sold in the UK during 2016 generated 20,430 FTEs of direct employment, £960.7 million in direct labour compensation and £1.52 billion in direct GVA (Table 65). This includes only the publishing value related to UK-made content.

**Table 65**  
**Summary of Direct Economic Impact of all Video Games Developed, Published or Sold in the UK, 2016**

	Develop-ment	Publish-ing	Digital sales	Physical sales	Total
Employment (FTEs)	13,840	2,300	310	3,980	<b>20,430</b>
Labour compensation (£m)	737.6	123.1	13.2	86.8	<b>960.7</b>
GVA (£m)	826.0	526.6	31.7	132.0	<b>1,516.3</b>

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS and ASHE

## 11.2 Total Economic Impact

The total economic impact (including indirect and induced impacts) of UK-made video games – VGTR and non-VGTR – was equal to 29,430 FTEs of employment, £1.19 billion in labour compensation and £1.67 billion in GVA (Table 66).

**Table 66****Total Economic Impact Generated by UK-made Video Games throughout all parts of the Value Chain, 2016**

		Develop-ment	Publishing	Digital sales	Physical sales	Total
Employment (FTEs)	Direct	13,840	400	60	590	<b>14,890</b>
	Indirect	7,250	1,100	30	320	<b>8,700</b>
	Induced	4,980	660	30	170	<b>5,840</b>
	<b>Total</b>	<b>26,070</b>	<b>2,160</b>	<b>120</b>	<b>1,080</b>	<b>29,430</b>
Labour compensation (£m)	Direct	737.6	21.4	2.4	12.9	<b>774.3</b>
	Indirect	212.0	36.7	1.1	8.4	<b>258.2</b>
	Induced	134.6	17.7	0.8	4.5	<b>157.6</b>
	<b>Total</b>	<b>1,084.2</b>	<b>75.8</b>	<b>4.3</b>	<b>25.8</b>	<b>1,190.1</b>
GVA (£m)	Direct	826.0	91.1	5.8	19.7	<b>942.6</b>
	Indirect	369.5	58.7	1.8	13.8	<b>443.8</b>
	Induced	245.1	32.3	1.4	8.2	<b>286.9</b>
	<b>Total</b>	<b>1,440.6</b>	<b>182.0</b>	<b>9.0</b>	<b>41.6</b>	<b>1,673.2</b>

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS and ASHE  
 Note: Figures may not sum to totals due to rounding

All video games – either developed, published or sold in the UK – generated a total value economic impact (including indirect and induced impacts) of 46,380 FTEs, £1.72 billion in labour compensation and £2.82 billion in GVA.

**Table 67****Total Economic Impact Generated by all Video Games Developed, published and sold in the UK, 2016**

		Develop-ment	Publishing	Digital sales	Physical sales	Total
Employment (FTEs)	Direct	13,840	2,300	310	3,980	<b>20,430</b>
	Indirect	7,250	6,350	190	2,120	<b>15,910</b>
	Induced	4,980	3,790	160	1,110	<b>10,040</b>
	<b>Total</b>	<b>26,070</b>	<b>12,440</b>	<b>660</b>	<b>7,210</b>	<b>46,380</b>
Labour compensation (£m)	Direct	737.6	123.1	13.2	86.8	<b>960.7</b>
	Indirect	212.0	212.0	5.9	56.6	<b>486.6</b>
	Induced	134.6	102.3	4.2	30.0	<b>271.2</b>
	<b>Total</b>	<b>1,084.2</b>	<b>437.5</b>	<b>23.3</b>	<b>173.5</b>	<b>1,718.5</b>
GVA (£m)	Direct	826.0	526.6	31.7	132.0	<b>1,516.3</b>
	Indirect	369.5	339.2	9.8	92.6	<b>811.1</b>
	Induced	245.1	186.4	7.6	54.7	<b>493.8</b>
	<b>Total</b>	<b>1,440.6</b>	<b>1,052.2</b>	<b>49.1</b>	<b>279.3</b>	<b>2,821.2</b>

Source: Olsberg•SPI/Nordicity estimates based on data from Ukie, Superdata, GfK, Kantar World Panel, ABS and ASHE

## 11.3 Spillover Impacts

### 11.3.1 Merchandise

The major source of spillover from video games, as in some of the other sectors, is to the retail sector via merchandise. Ukie publish an annual valuation of the UK video games market which contains useful data which helps to calculate this impact.

In total, £100.6 million worth of video games-related merchandise was sold in the UK in 2016.<sup>142</sup> This total is down somewhat on the 2013 figure of £196.9 million, but this may be accounted for by the cyclical nature of the sector and the maturation of the current generation of consoles. This total included:

- Children's spin-off toys and games: £66.8 million;
- Books and magazines: £18.4 million;
- Music and film: £7.8 million

The average retail profit margin for the UK of 30% was then applied to this total share to give estimated profits of £30.2 million. ONS-derived ratios for the retail sector were applied to this to derive other economic impacts, allowing an estimation of 770 FTEs and £34.4 million in GVA.

### 11.3.2 Esports

Esports is a new, rapidly-growing element of the games sector, which involves the broadcast of games being played competitively with large prizes and audiences. It has expanded rapidly in recent years and is becoming an emerging but significant new component of the industry. However, in the context of this report, the economic benefits of esports are counted as a spillover from the video games sector.

In order to value the impact which this developing sector has for the UK, Ukie provided headcount data for the esports teams and specialist companies operating in the UK, as well as the esports departments of companies such as Twitch and YouTube which support the sector through online streaming. These data suggest that there are around 280 FTEs presently engaged directly within the esports sector in the UK.

In order to place a value on this, it is reasonable to assume that, at the moment, the business model for esports most closely resembles that of the sports industry – that is, SIC 93.1 Sports activities. Therefore, economic ratios for SIC 93.1 were used to derive estimates of the economic impact of esports.

On this basis, the 280 FTEs directly employed in esports translates to £16.1 million in spending on esports, and a total economic impact (i.e. including direct, indirect and induced impacts) of 470 FTEs and £18.4 million in GVA during 2016.

<sup>142</sup> UK games market worth a record £4.33bn in 2016, Ukie (16th March, 2017), available at: <https://ukie.org.uk/news/2017/03/uk-games-market-worth-record-£433bn-2016>



## 11.4 Overall Economic Contribution

Including these spillover impacts, the overall impact of the entire video games sector in the UK (including video games developed, published or sold in the UK) is estimated to amount to 47,620 FTEs, and just over £2.87 billion in GVA.

**Table 68**  
**Overall Economic Contribution of the UK Video Games Sector, 2016**

	Employment (FTEs)	GVA (£m)
Total value chain impact	46,380	2,821.2
Spillover effects:		
Merchandising	770	34.4
eSports	470	18.4
<b>Overall economic contribution</b>	<b>47,620</b>	<b>2,874.0</b>

# Appendix 2

## Animation within the Tax Reliefs

12

As is noted in Section 7, ATR-supported animation production in the UK represents only part of current animation activity. In order to provide a full picture of the impact of animation production in the UK, an exercise has been undertaken to estimate the economic contribution of animation in other tax relief sectors, in particular FTR.

## 12.1 Direct Impact

### 12.1.1 Production

In addition to those programmes produced through ATR during 2016, UK production companies also generated a range of animation projects through other tax reliefs during this year. As we note above, FTR is a particular source for this.

A survey of UK animation companies was used to establish the value of total animation production in the UK, which was then categorised according to whether it was found in the BFI’s statistics or not. Added to the economic impact for ATR established above, this indicates that total estimated UK animation spend of £131.5 million in 2016 generated 1,790 FTEs of direct employment, £75.6 million in direct labour compensation and £89.7 million in direct GVA.

**Table 69**  
**Direct Economic Impact of Animation Production in the UK, 2016**

	ATR	Other Tax Reliefs	Total
UK spend (£m)	97.1	34.4	<b>131.5</b>
Employment (FTEs)	1,320	470	<b>1,790</b>
Labour compensation (£m)	55.8	19.8	<b>75.6</b>
GVA (£m)	66.2	23.5	<b>89.7</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, survey, Attentional, Ofcom, AS and ASHE

### 12.1.2 Television Broadcast

Such content is frequently broadcast on television, and generates economic impact through this window as well. Added to the television broadcast value for ATR-supported productions, this generates a total television broadcast impact for UK animation of £116.1 million in attributable revenue, 270 FTEs of direct employment, £12.8 million in direct labour compensation and £41.8 million in direct GVA (Table 70).

**Table 70**  
**Direct Economic Impact of UK-made Animation Programmes on UK television, 2016**

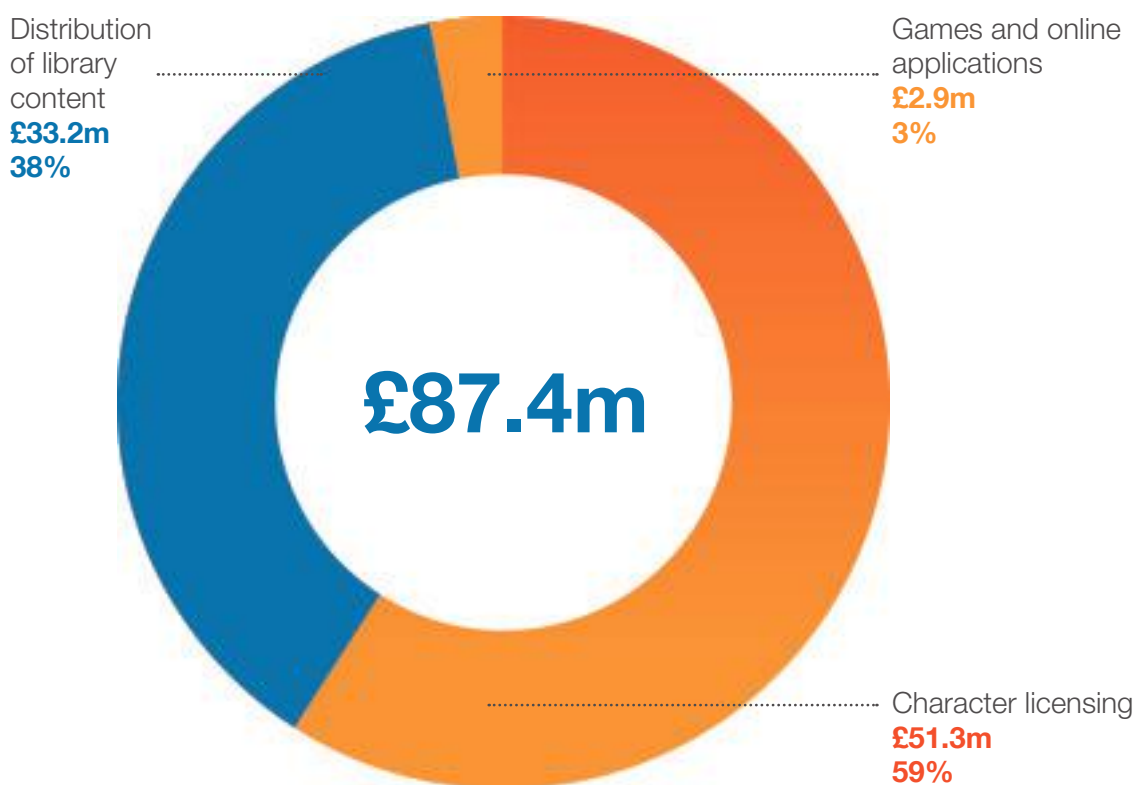
	ATR	Other Tax Reliefs	Total
Economic share	0.56%	0.28%	<b>0.84%</b>
Attributable revenue (£m)	77.4	38.7	<b>116.1</b>
Employment (FTEs)	180	90	<b>270</b>
Labour compensation (£m)	8.5	4.3	<b>12.8</b>
GVA (£m)	27.9	13.9	<b>41.8</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE

### 12.1.3 Distribution

In addition to the income earned from the production of animation content, UK-based animation companies earned an estimated £87.4 million in distribution revenue in 2016. This included £51.3 million in revenue from character licensing, £33.2 million from the distribution of library content and £2.9 million from video games and online applications.

**Figure 33**  
**Distribution Revenue in the UK Animation Sector, 2016 (£m)**



Source: Olsberg•SPI/Nordicity estimates based on survey

Added to the value established for ATR-supported content, this indicates a total distribution sector impact for UK-made animation programmes of £87.4 million in attributable revenue, 60 FTEs in direct employment, £5.4 million in direct labour compensation and £31.9 million in direct GVA.

**Table 71**  
**Direct Economic Impact of Distribution of UK-made Animation Programmes, 2016**

	ATR	Other Tax Reliefs	Total
Attributable revenue (£m)	12.5	74.9	<b>87.4</b>
Employment (FTEs)	10	50	<b>60</b>
Labour compensation (£m)	0.5	4.9	<b>5.4</b>
GVA (£m)	2.6	29.2	<b>31.9</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE

## 12.1.4 Video Platforms

Such content generates value on video platforms – both physical and digital – in addition to that created by ATR-supported animation programmes. Adding these together, UK-made animation generated 60 FTEs of direct employment, £2.3 million in direct labour compensation and £6.0 million in direct GVA.

**Table 72**  
**Direct Economic Impact of ATR Programming on Video Platforms, 2016**

		Value of animation (£m)	Employment (FTEs)	Labour compensation (£m)	GVA (£m)
ATR	Physical video	4.9	20	0.5	<b>0.8</b>
	Digital video	14.9	20	1.1	<b>3.2</b>
	<b>Total</b>	<b>19.8</b>	<b>40</b>	<b>1.6</b>	<b>4.0</b>
Other Tax Reliefs	Physical video	2.4	10	0.2	<b>0.4</b>
	Digital video	7.4	10	0.5	<b>1.6</b>
	<b>Total</b>	<b>9.8</b>	<b>20</b>	<b>0.7</b>	<b>2.0</b>
Total	Physical video	7.3	30	0.7	<b>1.2</b>
	Digital video	22.3	30	1.7	<b>4.8</b>
	<b>Total</b>	<b>29.6</b>	<b>60</b>	<b>2.4</b>	<b>6.0</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, I.H.S., ABS, CRTC, public financial reports, Official Charts Company, BASE, ASHE

Note: Some figures may not sum due to rounding

## 12.1.5 Summary

Bringing all these elements together, UK-made animation – including ATR and non-ATR animated programming – generated 2,180 FTEs of direct employment, £96.2 million in direct labour compensation and £169.3 million direct GVA in 2016.

**Table 73**

**Summary of Direct Economic Impact of Animation Programmes throughout all parts of the Value Chain, 2016**

		Production	Distribution	Television broadcast	Video platforms <sup>†</sup>	Total
ATR	Employment (FTEs)	1,320	10	180	40	<b>1,550</b>
	Labour compensation (£m)	55.8	0.5	8.5	1.6	<b>66.5</b>
	GVA (£m)	66.2	2.6	27.9	4.0	<b>100.7</b>
Other Tax Reliefs	Employment (FTEs)	470	50	90	20	<b>630</b>
	Labour compensation (£m)	19.8	4.9	4.2	0.8	<b>29.7</b>
	GVA (£m)	23.5	29.2	13.9	2.0	<b>68.6</b>
Total	Employment (FTEs)	1,790	60	270	60	<b>2,180</b>
	Labour compensation (£m)	75.6	5.4	12.8	2.4	<b>96.2</b>
	GVA (£m)	89.7	31.9	41.8	6.0	<b>169.3</b>

Source: Olsberg+SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS and ASHE

Note: Figures may not sum to totals due to rounding

† Includes physical video (i.e. DVD sales and rentals) and digital video (i.e. VoD/SVoD/TVoD)

## 12.2 Total Economic Impact

As with the other sectors of the market, non-ATR animation generates indirect and induced impacts. When these impacts are combined with the direct impacts, UK-made animation generated 4,310 FTEs of employment, £152.4 million in labour compensation and £274.1 million in GVA in 2016.

**Table 74**  
**Multiplier Effects and Total Economic Impact Generated by UK-made Animation Programmes, 2016**

		Production	Distribution	Television broadcast	Video platforms†	Total
Employment (FTEs)	Direct	1,790	60	270	60	<b>2,180</b>
	Indirect	770	330	200	50	<b>1,350</b>
	Induced	520	130	90	40	<b>780</b>
	<b>Total</b>	<b>3,080</b>	<b>520</b>	<b>560</b>	<b>150</b>	<b>4,310</b>
Labour compensation (£m)	Direct	75.6	5.4	12.8	2.4	<b>96.2</b>
	Indirect	19.1	9.3	5.8	1.4	<b>35.6</b>
	Induced	13.9	3.4	2.4	1.0	<b>20.7</b>
	<b>Total</b>	<b>108.7</b>	<b>18.1</b>	<b>20.9</b>	<b>4.8</b>	<b>152.4</b>
GVA (£m)	Direct	89.7	31.9	41.8	6.0	<b>169.3</b>
	Indirect	37.5	17.4	11.4	2.3	<b>68.6</b>
	Induced	25.4	6.2	2.9	1.8	<b>36.2</b>
	<b>Total</b>	<b>152.5</b>	<b>55.4</b>	<b>56.1</b>	<b>10.0</b>	<b>274.1</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, survey, Attentional, Ofcom, I.H.S., ABS, CRTIC, public financial reports and ASHE

Note: Figures may not sum to totals due to rounding

† Includes physical video (i.e. DVD sales and rentals) and digital video (i.e. VoD/SVoD/TVoD)

## 12.3. Spillover Impact

### 12.3.1 Merchandise

The approach for merchandising is carried over from Section 7.6; reflecting the fact that animation series covered by this spillover in general include both ATR-supported and non-ATR episodes, no apportionment between the ATR and non-ATR sections is made.

The estimate of £560.0 million in merchandise spending is therefore carried forward, along with the economic impacts of £81.0 million and 2,800 of FTEs generated.

As is noted above, the scale of the merchandising sector within the UK and overseas, it is also likely that this is a significant underestimate. However, despite various different approaches being taken – and animation production companies being asked for estimates as part of a survey during the research for this Study – no better data were identified to improve this estimate.

## 12.3.2 Skills Spillovers

Thus far, the measurement of the economic contribution of the animation sector has focused on the economic activity and employment that takes place within companies that focus primarily in the creation of animation content – for films, television programmes, television commercials and other videos. However, the same skills used by digital animators in these companies for character and creature creation, animation and realisation are also used by similarly skilled talent working at companies that focus primarily on VFX or games development.

Research conducted by the UK Screen Alliance indicates that an estimated 85% of the activity at UK-based VFX companies involves character and creature creation, animation and realisation, and thereby, employs animation skills. Statistics published by Creative Skillset (and corroborated by statistics published Ukie) indicate that approximately 3% of the games development workforce in the UK is involved in character and creature creation, animation and realisation.

On the basis of this, a portion of the employment and economic activity in both the VFX and games sectors can be considered a positive animation skills spillover from the core animation sector.

The total economic contribution associated with these animation skills spillovers is presented in Table 74. These economic contribution estimates include a portion of the direct, indirect and induced impacts in each sector (i.e. VFX and video games). They also account for the economic contribution of UK-made content right across the value chain – from production/development through to video platforms/consumption.

In total, animation skills spillovers generated an additional 8,260 FTEs of employment, £132.0 million in labour compensation and £554.9 million in GVA in 2016. The vast majority of these animation skills spillovers took place in the VFX sector, where an estimated 83% of employment and economic activity involved character and creature creation, animation and realisation.<sup>143</sup>

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<sup>143</sup> A small adjustment was made to the 85% rate applied to the VFX sector to account for a single company that responded to both the VFX and animation sector surveys



**Table 75****Summary of Economic Contribution Associated with Animation Skills Spillovers, 2016†**

		Production/ Development	Distribution/ Publishing	Exhibition Television broadcast	Video platforms / Consumption††	Total
VFX	Employment (FTEs)	5,080	790	1,200	300	<b>7,370</b>
	Labour compensation (£m)	203.7	32.5	31.8	8.3	<b>276.3</b>
	GVA (£m)	261.2	153.4	74.3	1.8	<b>504.7</b>
Video games	Employment (FTEs)	790	60	--	40	<b>890</b>
	Labour compensation (£m)	32.5	2.3	--	0.9	<b>35.7</b>
	GVA (£m)	43.2	5.5	--	1.5	<b>50.2</b>
<b>Total</b>	<b>Employment (FTEs)</b>	<b>5,870</b>	<b>850</b>	<b>1,200</b>	<b>340</b>	<b>8,260</b>
	<b>Labour compensation (£m)</b>	<b>236.2</b>	<b>34.8</b>	<b>31.8</b>	<b>9.2</b>	<b>312.0</b>
	<b>GVA (£m)</b>	<b>304.4</b>	<b>158.9</b>	<b>74.3</b>	<b>17.3</b>	<b>554.9</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Attentional, Ofcom, ABS, ASHE, 2017 survey of VFX companies, Ukie, Superdata, GfK and Kantar World Panel

Note: Figures may not sum to totals due to rounding

† Includes the sum of direct, indirect and induced impacts across the VFX and video games value chains, which can be attributed to animation skills spillovers

†† Includes economic contribution from physical video (i.e. DVD sales and rentals), digital video (i.e. VoD/SVoD/TVoD), physical sales of video games and digital sales of video games

## 12.4 Overall Economic Contribution

Including these spillover impacts, the overall contribution of the animation sector in 2016 amounted to 15,390 FTEs in employment, and £911.9 million GVA (Table 76).

**Table 76****Summary of Overall Economic Contribution of UK Animation Sector, 2016**

	Employment (FTEs)	GVA (£m)
Total economic impact	4,310	274.7
Spillover impacts:		
Merchandising	2,800	81.0
Animation skills	8,280	556.8
Overall economic contribution	15,390	911.9

# Appendix 3

Total VFX Sector

13

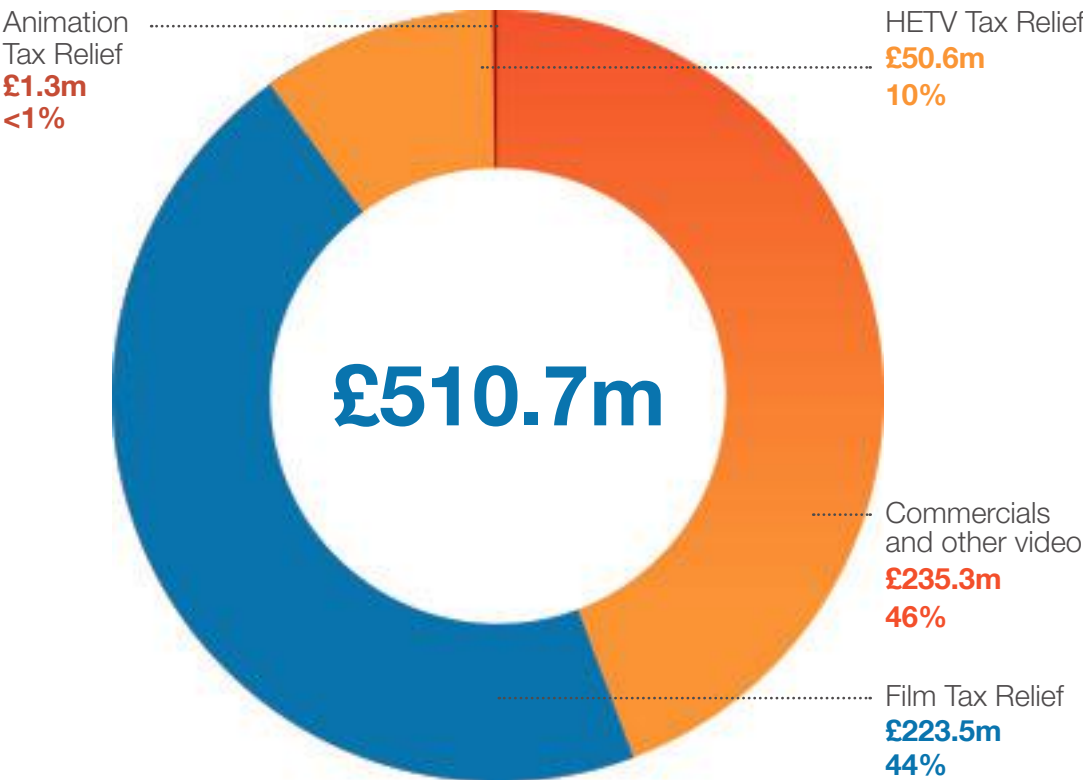
As we note in Section 9, production within the tax reliefs represents only part of the total UK VFX Sector. In order to provide a full picture of the impact of this important industry, an exercise has been undertaken to estimate the economic contribution outside of the tax reliefs.

### 13.1 Direct Impact

A survey of VFX studios in the UK was conducted by Olsberg•SPI to establish spending within the wider VFX sector in 2016 – i.e. including VFX work for commercials, music videos, installations and interactive content.

In 2016, an estimated £510.7 million was spent on VFX in the UK (Figure 34). Commercials and other videos accounted for the largest proportion of this, with £235.3 million (46%). This was closely followed by FTR-related productions accounting for £223.5m (44%). HETV projects accounted for £50.6 million (10%); ATR productions accounted for £1.3 million (<1%).

**Figure 34**  
**Total Spending on all VFX Services in the UK (£m), 2016**

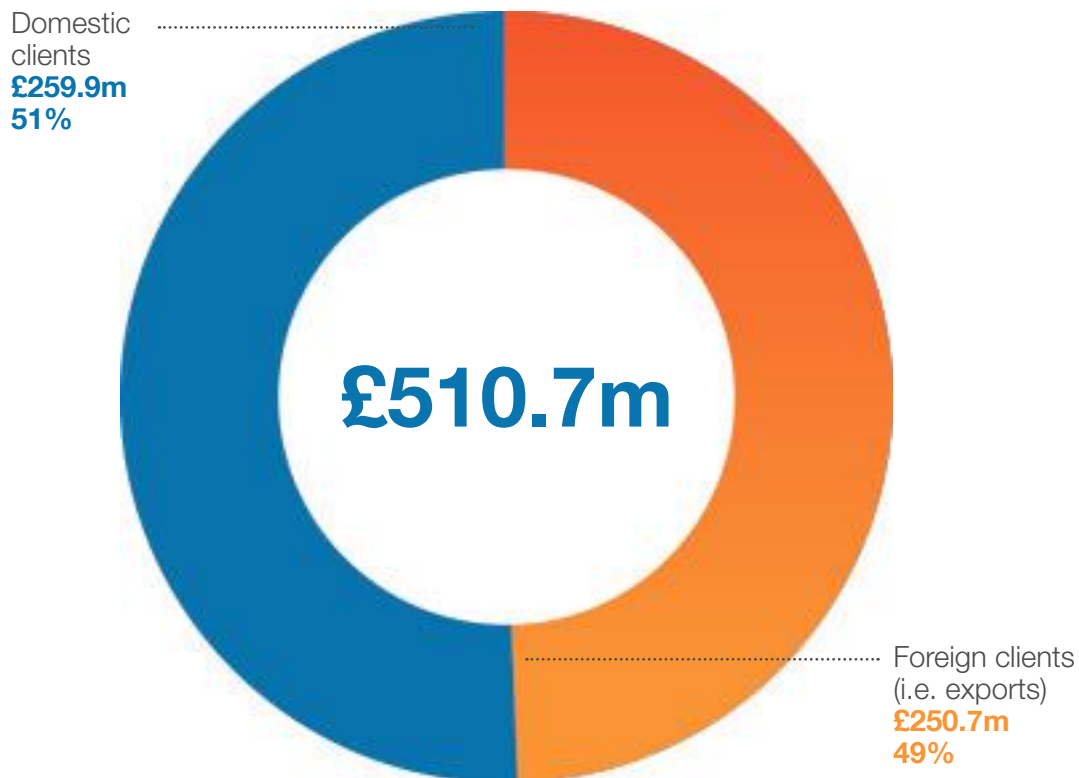


Source: Olsberg•SPI/Nordicity estimates based on data from 2017 survey of VFX companies and D&B

Notes:  
 Excludes any revenue earned by VFX companies from video or audio post-production services  
 Excludes any spending on VFX services for commercials and other video products

This spend was split equally between domestic and foreign clients, with 49% of productions using UK VFX services being located overseas, and 51% at home (Figure 35).

**Figure 35**  
**VFX Spend in the UK, by Ultimate Location of Client, 2016 (£m)**



Source: Olsberg•SPI/Nordicity estimates based on data from 2017 survey of VFX companies and D&B

Notes:

Excludes any revenue earned by VFX companies from video or audio post-production services  
Excludes any spending on VFX services for commercials and other video products

Using the Job Creation Model, total VFX production expenditure figures were analysed to estimate the value and impact of spending from each relevant fiscal incentive through the VFX sector. This analysis shows that VFX-related production generated 8,140 FTEs of direct employment in 2016, and £372.3 million in direct labour compensation and £426.9 million in direct GVA in 2016. Of these totals, the production supported by one of the tax reliefs accounted for 4,390 FTEs, £200.8 million in labour compensation and £230.2 million in GVA (Table 77).

**Table 77**  
**Direct Economic Impact of all VFX Production in the UK, 2016**

	VFX spend (£m)	Employment (FTEs)	Labour compensation (£m)	GVA (£m)
Film Tax Relief projects	223.5	3,560	162.9	186.8
HETV Tax Relief projects	50.6	810	36.9	42.3
Animation Programme Tax Relief project	1.3	20	0.9	1.1
Children's Television Tax Relief projects	0.0	0	0.0	0.0
Commercials and other video projects	235.3	3,750	171.5	196.7
<b>Total</b>	<b>510.7</b>	<b>8,140</b>	<b>372.3</b>	<b>426.9</b>

Source: Olsberg•SPI/Nordicity estimates based on data from 2017 survey of VFX companies and D&B

Notes:

Excludes any revenue earned by VFX companies from video or audio post-production services

Excludes any spending on VFX services for commercials and other video products

As with the other sectors, spending through the VFX sector generates indirect impacts through its purchases of goods and services, and induced impacts through the re-spending of wages by direct and indirect employees. To estimate the value of these multiplier effects, a bespoke model was generated through an analysis of the ONS input-output tables.

This model indicated that the VFX sector generated a total economic impact, including indirect and induced impacts, of 11,340 FTEs of employment, £455.8 million in labour compensation and £584.4 million in GVA during 2016 (Table 78).

**Table 78**  
**Total Economic Impact of all VFX Production in the UK, 2016**

	Direct	Indirect	Induced	Total
Employment (FTEs)	8,140	1,530	1,670	<b>11,340</b>
Labour compensation (£m)	372.3	38.3	45.2	<b>455.8</b>
GVA (£m)	427.0	75.0	82.3	<b>584.4</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, ABS, ASHE and 2017 survey of VFX companies and D&B

Note: Figures may not sum to totals due to rounding

### 13.1.1 Value Chain Impact

Table 79 combines the economic impact of all VFX production with the economic impact that VFX content (for film and television) generates across the value chain (see Table 55 in Section 9.3). This combined economic impact generated 14,090 FTEs of employment, £543.5million in labour compensation and £878.2 million in GVA in 2016.

**Table 79**  
**Total Economic Impact Across the Screen Sector Value Chain of all VFX Content in the UK, 2016**

	Production	Distribution	Cinema exhibition	Television broadcast	Video platforms <sup>†</sup>	Total
Employment (FTEs)	11,340	950	1,070	360	370	<b>14,090</b>
Labour compensation (£m)	455.8	39.2	24.7	13.7	10.1	<b>543.5</b>
GVA (£m)	584.4	185.1	52.0	37.6	19.1	<b>878.2</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Ofcom, ABS I.H.S., ABS, CRTIC, public financial reports, Official Charts Company, BASE, ASHE, 2017 survey of VFX companies and D&B

Note: Figures may not sum to totals due to rounding

† Includes physical video (i.e. DVD sales and rentals), and digital video (i.e. VoD/SVoD/TVoD)

## 13.2 Overall Economic Contribution

In Table 80, the value of the spillover impacts generated by the production of VFX content for film and television (see Table 56 in Section 9.3) is added to the total economic impact of VFX content across the value chain to estimate the overall economic contribution of all VFX content in the UK. In 2016, all VFX content in the UK generated 17,940 FTEs of employment and just over £1 billion in GVA.

**Table 80**  
**Overall Economic Contribution (including Spillover Impacts<sup>†</sup>) of all VFX Content in the UK, 2016**

	Production	Distribution	Cinema exhibition	Television broadcast	Video platforms <sup>††</sup>	Spillover impacts	Total
Employment (FTEs)	11,340	950	1,070	360	370	3,850	<b>17,940</b>
GVA (£m)	584.4	186.1	52.3	38.4	19.3	165.0	<b>1,043.2</b>

Source: Olsberg•SPI/Nordicity estimates based on data from BFI, Ofcom, ABS I.H.S., ABS, CRTIC, public financial reports, Official Charts Company, BASE, ASHE and 2017 survey of VFX companies

Note: Figures may not sum to totals due to rounding

† Only includes spillover impacts associated with VFX content incorporated in film and television production supported by the tax reliefs; excludes any spillover impacts associated with VFX for commercials other video production

†† Includes physical video (i.e. DVD sales and rentals), and digital video (i.e. VoD/SVoD/TVoD)



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# Glossary

**ABI**

Annual Business Inquiry, a dataset provided by the ONS

**ASHE**

Annual Survey of Hours and Earnings, a dataset provided by the ONS

**ABS**

Annual Business Survey, a dataset provided by the ONS

**APS**

Annual Population Survey, a dataset provided by the ONS

**ATR**

Animation Programme Tax Relief

**BFC**

British Film Commission

**BFI**

British Film Institute

**BRES**

Business Register and Employment Survey, a dataset provided by the ONS

**BVA**

British Video Association, a trade organisation

**CAA**

Cinema Advertising Association, a trade organisation

**CTR**

Children's Television Tax Relief

**DCMS**

Department for Digital, Culture, Media & Sport

**Direct Impact**

The economic impact directly attributable to production, distribution, and consumption undertaken within the sectors covered by this Study

**DTO**

Download to own, a digital sales model for video content, also known as electronic-sell-through

**DVD**

Digital video disc

**EST**

Electronic sell-through, a digital sales model for video content

**FTE**

Full-time equivalent, a unit to measure non-standard employment, where 1 FTE is equivalent to the average annual workload of an individual employed full time

**FTR**

Film Tax Relief

**GDP**

Gross domestic product, the monetary measure of all final goods and services produced in an economy over a given period (in this case, annually)

**GfK**

A market research firm

**GIC**

Games Investor Consulting, a consultancy firm

**GVA**

Gross value added, a measure of the goods and services provided in a geographical area, industry, or sector of the economy

**HETR**

High-end Television Tax Relief

**HETV**

High-end television. For the purpose of HETR this is defined as a production made at £1m or above per broadcast hour

**IHS**

A global information company, providing data to industries including the audiovisual sector

**IDBR**

Inter-Departmental Business Register

**LFS**

Labour Force Survey, a dataset provided by the ONS

**Middleware**

A common piece of software which provides services beyond those offered by an operating system, for example a game engine, such as Unity

**NUTS**

Nomenclature of Territorial Units for Statistics; a methodology for sub-dividing countries at EU level

**NUTS-1**

The highest-level sub-division of NUTS, representing the nations of Northern Ireland, Scotland, and Wales, and England's 9 regions

**Ofcom**

Independent regulator and competition authority for the UK communications industries

**ONS**

Office for National Statistics

**Operating surplus**

Operating surplus refers to the income earned by a business's owner-operator and shareholders and is often similar to operating profits. Operating surplus is the residual income leftover after the value of employment costs and other purchases of supplies and services are deducted from the value of output

**OTT**

Over-the-top - a model for delivering content direct to the consumer over the internet, used by VoD and SVoD providers

**Pact**

Producers Alliance for Cinema and Television, a trade organisation for the film and television sector

# Glossary

**Primary window**

A platform or service in which a film or television programme is first released commercially to the public

**PSB**

Public Service Broadcaster, a free-to-air broadcaster whose licence terms include various public service remits, for example the provision of news or children's content

**Qualifying spend**

The elements of production or development spend which are eligible for the screen sector tax reliefs

**RoI**

Return on investment

**Secondary Window**

A platform or venue in which a film or television programme is released commercially to the public, following release in the primary window

**SIC**

Standard Industrial Classification, a methodology for classifying industries, using a four-digit code

**SIC Plus**

An approach adopted by Olsberg•SPI and Nordicity to ensure that the impact of various companies in the video games sector which do not report in the official SIC codes are considered

**SVoD**

Subscription video-on-demand, a digital rental model for video content

**TIGA**

The Independent Games Developers Association a trade organisation for the games sector

**TVoD**

Transactional video-on-demand, a digital sales model for video content

**UKFC**

UK Film Council, a former public agency for film that was closed in 2011

**Ukie**

UK Interactive Entertainment, a trade organisation for the games sector

**VFX**

Visual Effects

**VGTR**

Video Games Tax Relief

**VoD**

Video on demand, a digital sales or rental model for video content





[bfi.org.uk/screenbusiness](https://bfi.org.uk/screenbusiness)