Impacts of leaving the EU on the UK's screen sector

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Key points

- The UK’s screen sector (film, TV, video games, animation and post-production) is underpinned by a set of regulations, legislation and policies, many of which are linked with the UK’s membership of the EU. This report is aimed at explaining and quantifying the impact of this relationship, and bringing clarity to the debate on the implications of different exit scenarios.
- Exit from the EU creates some potential opportunities, in particular around allowing for greater competitiveness of UK exports in light of sterling devaluation; an ability for the UK to sign bespoke free trade agreements (FTAs) with non-EU countries; making tax reliefs on the screen industries more effective; or avoiding some costs of implementing the forthcoming EU changes to regulations on data protection and cross-border copyright.
- Conversely, exit is linked to many risks:
    - most importantly, losing labour market flexibility and overall productivity through potential loss of freedom of movement of labour;
    - losing the ability to broadcast channels from the UK to the rest of the EU by complying with UK regulations (the ‘country of origin principle’ (COOP) set out in the Audiovisual Media Services Directive, AVMSD);
    - losing access to financing (both screen sector-specific as well as economy-wide).
- Individual opportunities and risks materialise in particular exit scenarios only. We have identified five broad types of exit, ranging from the UK retaining its membership of the European Economic Area (EEA), a European Free Trade Association (EFTA)-type arrangement or a screen sector-specific free trade agreement (FTA) with the EU, to the World Trade Organization (WTO)-style exits where no reciprocal agreement with the EU is reached.
- We conclude that most of the exit scenarios result in net adverse impacts on the UK’s screen sector. There are exit scenarios whereby the UK’s screen sector could benefit from exit from the EU, albeit this is predicated on a set of arrangements that seem unlikely given the current state of the negotiations. Specifically, such arrangements would require the UK to negotiate to opt into legislative and policy arrangements that are beneficial to the UK’s screen sector (such as the AVMSD and Creative Europe) and to opt out of those that are harmful (such as the cross-border copyright reforms). The arrangements would also involve the UK government accepting freedom of movement of people. Given the current nature of the negotiations with the EU, the UK is unlikely to be able to make such a deal.
- In light of this, and given the important contribution of the UK screen sector to the UK economy and the promotion of UK cultural values across the world, further work could focus on examining in greater detail how the identified risks should be mitigated and how the sector can access the opportunities Britain leaving the EU unlocks.

Executive summary

Following the Referendum on the UK's Membership of the European Union (EU), there has been considerable uncertainty over how the UK leaving the EU might affect the UK's screen sector, which spans film, television, video games, animation programming, and post-production and VFX.

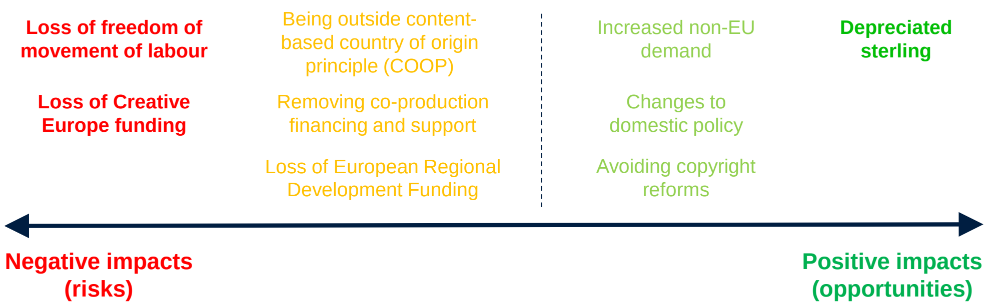
This report, commissioned by the British Film Institute on behalf of the UK's Screen Sector Task Force, is intended to help bring clarity to the overall landscape, as well as to enrich the current debate with quantitative, economic analysis on what various exit scenarios could imply.

The nature of the UK's screen sector

The UK's screen sector is a major contributor to the UK economy, with approximately 186,000 people in direct employment.[1] It contributes at least £2.6bn in direct gross value added (GVA), and a further £3.5bn in indirect GVA. Both film and television constitute major UK exports, of at least £1.2bn per year each, with a significantly positive net trade balance. On the cultural side, the UK's screen sector plays an important part in promoting regional and language diversity, on-screen diversity, creativity, UK values, and the country's overall standing in the world.

The industry is currently underpinned by a set of regulations, legislation and policies, many of which are linked with the UK's membership of the EU. This report explains each of them in detail, while concluding that the policies shown in the diagram below constitute the main opportunities and risks. We explain them briefly below.

Main policies, legislation and macroeconomic factors



Source: Oxera analysis and modelling.

Major opportunities and risks

Depending on the type of exit, leaving the EU opens up potential opportunities, in particular:

- a **depreciated pound sterling** allows for greater competitiveness of UK exports, and for increased use by international producers of domestic UK production, post-production and visual effects (VFX) facilities;[2]
- **opening up new international markets** outside the EU to UK content, if the UK is able to sign free trade agreements (FTAs) with non-EU countries,

[1] Detailed sources for all statistics in this Executive Summary can be found in section 2.
[2] Neither the UK's screen sector nor the UK government have control over the exchange rate. While current forecasts suggest that the pound sterling will depreciate, this might change over the medium term owing to unexpected changes in the global macroeconomic picture (as well as with the outcome of the exit negotiations).

stimulating further demand for UK exports abroad, as well as further inward investment;

- an opportunity to make the **tax reliefs more effective** (as a result of not being directly bound by EU state aid rules in certain exit scenarios), which could unlock more inward investment and content creation;
- **avoidance of** (some of the) **incremental costs of upcoming EU regulation** for UK-focused companies (e.g. some elements of the copyright reforms within the European Commission's Digital Single Market proposals involving cross-border access, or video games regulations on data protection).

Conversely, leaving the EU presents potential risks, most notably:

- the **loss of freedom of movement of people on a long-term basis** is likely to erode the available pool of staff and talent in the UK across the industry (due to outward migration, lower immigration and lower uptake of UK-based education courses) and adversely impact the parts of the value chain that require a highly skilled workforce (in particular, post-production, VFX, animation and video games);
- the **loss of Creative Europe funding** would deprive mainly smaller, independent film and TV programme producers and distributors of funding for their content and support in participating in industry-wide forums and conventions. The outcome would be a loss of jobs and cultural content;
- the **loss of freedom of movement of people on a temporary basis**, leading to increased difficulty for EU producers in undertaking principal photography in the UK, and vice versa, as well as taking away at least some of the flexibility of filling temporary employment gaps with EU citizens;
- **the loss of ability to broadcast channels under the Country of Origin Principle (COOP) within the Audiovisual Media Services Directive (AVMSD)** would be particularly impactful for non-domestic channels established in the UK but serving viewers across Europe, potentially leading to relocation of staff out of the UK;
- the **removal of co-production financing and support activities** would deprive the UK screen sector of an important source of financing and support, and the natural connection to producers in the EU;
- the **loss of support and training funds** (European Regional Development Fund—ERDF, Horizon 2020, university and training funds), which in the medium to long term would contribute towards erosion of UK skills and lower competitiveness of the UK-based firms, especially in the VFX, post-production and animation industries.

The order-of-magnitude impacts around these key opportunities and risks, as modelled in this report, are shown below.

Modelled impacts of main individual policies, regulations and legislation

Policy/issue	Impacts			
	Output (%)[1]	Employment[2]	Cultural[3]	Overall
Opportunities				
Depreciated sterling	7 to 9	6,500	Limited	**High**
Increased non-EU demand	3 to 4[4]	3,600	Limited	**Medium**
Increased tax relief	2 to 3	1,600	Positive	**Medium**
Avoiding cross-border copyright reforms	0 to 2	900	Limited	**Medium**
Risks				
Loss of freedom of movement of people (long term)	-6 to -5	-5,000	High negative	**High**
Loss of Creative Europe funds	-7 to 0	-2,300	High negative	**High**
Loss of freedom of movement of people (short term)	-2	-1,700	High negative	**High**
Being outside content-based COOP	—[5]	-1,600	High negative	**Medium**
Removing co-production financing and support	-3 to 0	-1,000	High negative	**Medium**
Loss of regional development funds	-3 to 0	-900	High negative (long term)	**Medium**

Note: [1] 'Output' refers to a proportional change in the volume of screen sector content made in the UK annually. [2] 'Employment' refers to the number of jobs gained or lost. [3] 'Cultural' impacts are summarised in terms of the magnitude of the overall impact. [4] The value of an FTA with non-EU countries that includes the screen sector is not well established. We assume that such agreements would result in a 10% increase relative to the current base, due to an increase in demand for UK-based screen sector experts and inward investment in UK-based services. These services would include animation, VFX, post-production and production facilities, as well as channel programming. [5] We have assumed that the inability to clear content regulations through the COOP within the AVMSD would result in the relocation of editorial decision-making and staff to another EU country, with their production activities retained within the UK.

Source: Oxera analysis.

Assessment of possible exit scenarios

It is currently unclear how the negotiations between the UK and EU will turn out, and depending on these, a number of exit scenarios are possible, each of which would create specific opportunities and/or risks. The individual scenarios considered in this report are as follows.

- **EEA**—this scenario involves the UK retaining its membership of the EEA, in which case all the current policies and legislation would remain unaltered, but the UK would benefit from having a depreciated sterling while also being unable to influence EU policy.
- **'Pure' WTO**—this scenario involves the UK leaving the EEA and trading with the EU according to 'pure' WTO rules, in which case the UK would lose the freedom of movement of goods and services and all EU funding, and would no longer be subject to any EU/EEA regulation and Directives.
- **EFTA-type arrangement**—if the UK were to maintain freedom of movement of goods, services and people, an EFTA-type arrangement might be more beneficial for the UK's screen sector than either the EEA scenario or potentially even the status quo. In this scenario, we assume that the UK would opt out of some of the EU regulations—in particular, the proposed copyright and data protection reforms. The exchange rate impact would be more pronounced, but it would also be possible to sign trade agreements with non-EU countries.

- **WTO with a screen sector FTA**—in the absence of freedom of movement, the UK could enter into a sector-specific FTA with the EU (as well as non-EU countries), with reciprocal provisions across the screen sector. For instance, in this scenario we have assumed that the UK would avoid the copyright reforms but would continue to be able to host channels for broadcast under the COOP. It could also continue to receive funding from Europe-wide sources, including Creative Europe.

- **WTO with changes to domestic policy**—in the event of no freedom of movement, and a lack of reciprocal agreements with the EU on aspects of the audiovisual (AV) policy, the UK could still improve on the ‘pure WTO’ outcome by signing FTAs with non-EU countries. (These FTAs could be larger in scale than those the UK would be able to achieve if it were negotiating as part of the EEA.) The UK could also adjust the level of its domestic tax reliefs, since it would no longer be bound by EU state aid regulations.

Using a stylised model of the UK’s screen sector, and a series of assumptions, we conclude that there are exit scenarios whereby the UK’s screen sector could benefit from leaving the EU, albeit these are predicated on a set of arrangements that seem unlikely given the current state of the negotiations.

Specifically, such arrangements would require the UK to negotiate to opt into or remain part of policies and legislations, such as the AVMSD and Creative Europe, that are beneficial; and to opt out of those, such as the reforms to cross-border copyright, that are harmful. They would also require the UK government to accept freedom of movement of labour. Given the current nature of the negotiations with the EU, the UK is unlikely to be able to make such a deal.

All other scenarios are likely to result in net adverse industry impacts, based on the assumptions used in this report. In light of this, and given the important contribution of the UK screen sector to the UK economy and the promotion of UK cultural values across the world, further work could focus on examining in greater detail how the identified risks could be mitigated and how the sector can access the opportunities Britain leaving the EU unlocks.

In the event that UK exit negotiations result in one of the FTA scenarios being considered (i.e. an EFTA-type arrangement or WTO with a screen sector FTA), the UK government’s negotiating position would need to address two key considerations:

- **interdependence between individual policies**—certain policies might need to be accepted as a ‘complete package’, preventing the UK from cherry-picking the policies that are in its particular favour (e.g. the UK is unlikely to be able to continue to receive funds from Creative Europe without accepting freedom of movement);

- **reciprocity**—many of the policies (e.g. AVMSD) apply to members of the EU/EEA only. While other countries can adopt these regulations, they would benefit from the provisions only if the EU/EEA countries reciprocate the agreements. In this regard, consistency of regulatory regimes between the UK and the rest of the EU is likely to be at the core of such reciprocity being granted.

1 Introduction

Following the Referendum on the UK's Membership of the European Union (EU), there has been considerable uncertainty over how the result might affect the UK's audio-visual (AV) industry, and, in particular, the screen sector, which spans film, television,[3] video games, animation programming and post-production and visual effects (VFX).[4] As one of the parts of the UK economy that is very closely linked to Europe—in terms of collaboration in content creation, financing and distribution, employment of non-UK citizens, and inward investment and trade—the screen sector might change significantly following the UK's exit from the EU.

Given the UK screen sector's overall cultural and economic importance, the British Film Institute (BFI) has brought together a Task Force of key representatives from across the industry to identify opportunities and challenges that might arise as a consequence of the result of the Referendum. The purpose of this Task Force is to advise the UK government on issues in the upcoming exit negotiations, including opportunities and risks, and as such to inform the overall negotiating priorities.[5]

A number of other organisations have already made recommendations on priorities in the negotiations. These include the Creative Industries Council and Creative Industries Federation, and multiple respondents to the Culture, Media and Sport Select Committee inquiry.[6]

1.1 Oxera's scope

The UK Screen Sector Task Force has commissioned Oxera to produce an independent report that will help bring clarity to the overall landscape, as well as enrich the current debate through quantitative, economic analysis on what different exit scenarios could imply.

Specifically, we have been tasked to produce a report that:

- enables the industry to assess the consequences of the Referendum decision for both the industry itself and the wider public;
- provides guidance to the government as to the key priorities and important outcomes of the exit negotiations for the UK's screen sector;
- assists screen sector organisations in planning for a variety of scenarios that might arise from the UK's decision to leave the EU;

[3] Our report deals with issues related to the television industry as a whole, but the quantification of the results is limited to high-end TV, defined as productions with spend of more than £1m per broadcast hour (in line with the definition of the High-end TV Tax Relief). This includes children's TV programmes that meet this criterion.
[4] Owing to data limitations, our modelling captures the effects of policies and legislation on VFX only, and not post-production.
[5] The UK's Screen Sector Task Force is made up of: Animation UK, British Film Institute, British Screen Advisory Council, Creative England, Creative Scotland, Creative Skillset, Directors UK, Northern Ireland Screen, Ffilm Cymru Wales, Film Distributors Association, Film Export UK, Independent Film and Television Alliance, Saffery Champness, Ukie, The UK Cinema Association, UK Screen Association, and Neil Watson, Film Policy Advisor.
[6] Creative Industries Council (2016), 'Creating a new world view'; Creative Industries Federation (2016), 'Brexit Report. The impact of leaving the EU on the UK's arts, creative industries and cultural education – and what should be done'; British Screen Advisory Council (2016), 'Written evidence submitted by the British Screen Advisory Council (IOB0019)'; Department of Culture, Media and Sport (2016), 'The impact of Brexit on the creative industries, tourism and the digital single market inquiry'.

- establishes lines of work for future research topics to ensure that the economic and cultural value of the UK's screen sector is preserved and continues to grow.

First and foremost, this report is intended as a comprehensive overview of the issues affecting the UK's screen sector overall in the context of the UK's forthcoming exit from the EU.

The second major contribution of this report is to provide numerical analysis of the likely impacts of policy or legislative change. The quantification we have undertaken should be interpreted as indicative, and as giving a sense of the magnitude of impacts of changes to different policies and legislation that underpin the UK's screen sector today. In the presence of intricate inter-relationships within the industry, our approach is by necessity stylised, and focuses only on impacts on content produced (also referred to as industry 'output') and employment. In all our modelling, we consider only aggregate, UK-wide impacts, although further points on geographic differences of impacts have been considered qualitatively. Similarly, all impacts on cultural diversity are considered qualitatively.

Owing to data limitations, we have been able to quantify the impacts on film, animation, VFX, video games and the high-end TV part of the overall TV industry only—in this sense, our estimates are conservative.

1.2 Options for the UK's exit from the EU

The specific way in which the UK will leave the EU is currently uncertain, and subject to extensive political debate. Any negotiations may be prolonged, and the negotiating positions themselves could change as the European political landscape develops.[7] For the purpose of this report, we have identified five main forms of exit which cover the wide range of options available at present. These are intended to give a representative range of possible medium-term, 'steady-state' exit options after all negotiations are complete and, where relevant, additional agreements are put in place.[8]

The five scenarios we have considered are as follows.[9]

- The UK retains European Economic Area (EEA) membership: the UK would leave the EU but retain its membership of the EEA, and freedom of movement of labour as well as access to the EU's Internal Market.[10]

[7] For example, as a product of the French presidential election (April–May 2017) or German parliamentary elections (2017).
[8] As such, we consider 'steady-state' outcomes after the 'Great Repeal Bill' has been passed, and the relevant legislation and regulations have been repealed. Even if, in the short term, all reciprocal agreements with the EU are broken, certain scenarios assume that they are reinstated with additional legislation/regulation. We have not considered the likely short-term impacts of the uncertainty linked with the negotiations.
[9] This list is not exhaustive, and it is not certain that all the options will be available to the UK in the event of exit, in particular when the latest press commentary is taken into account. We have purposefully abstracted from the current political debate and instead laid out distinct scenarios, even if some carry low probability of being reached.
One of the exit scenarios commonly referred to in the press is the 'Customs Union', whereby goods and services can move freely across borders without imposition of tariffs within the union, but with tariffs on imports from outside of the union. While this exit scenario is relevant for other parts of the UK economy, the screen sector (and more broadly, the AV sector) would be unlikely to be subject to tariffs upon exit from the EU. As such, we have not considered this as a stand-alone scenario.
[10] There are some mechanisms that allow EEA countries to restrict freedom of movement; see section 3.2.2. Our scenario assumes that this freedom is maintained.

- The UK becomes a member of European Free Trade Association (EFTA): the UK would leave the EU and the EEA, and negotiate a series of bilateral agreements similar to Switzerland's current arrangement with the EU.[11]
- The UK trades on World Trade Organization (WTO) terms with the EU, and repeals all relevant EU legislation. This scenario represents a 'hard' exit, but does not involve capitalising on opportunities arising from such an exit (as such, this represents the worst-case scenario).[12]
- The UK moves to WTO terms, but adopts new trade agreements with non-EU countries and adjusts some aspects of its screen sector policy: the UK 'makes the most' of WTO terms in the case where the EU does not engage in favourable bilateral negotiations.
- The UK moves to WTO terms, but signs a screen sector-specific free trade agreement (FTA) with the EU: the UK would adopt at least some of the EU legislation relevant to the screen sector on a reciprocal basis, such that the key elements of the sector continue to function in the same way. (Throughout this report we have assumed that this scenario does not involve freedom of movement of people.)[13]

One of the aims of this report is to identify which aspects of the UK's screen sector would be affected under different forms of exit, and, consequently, what opportunities open up and risks arise under each scenario. Scenarios that feature bilateral negotiations (EFTA, FTA) involve numerous options for a number of policies and legislation, as set out in detail in section 3.[14]

Abstracting from the likelihood of reaching specific outcomes, and the negotiating strategies used to arrive at them, we have focused our assessment on five broad types of exit, as listed below. They are purposefully stark and distinct, and represent a credible range from the 'best possible outcome', whereby exit leads to some industry growth opportunities without a large downside, to a 'worst possible outcome' that consists mostly of the downside risks.

1.3 Methodology

Our approach spanned a mixture of qualitative and quantitative analysis, and progressed through the following stages:

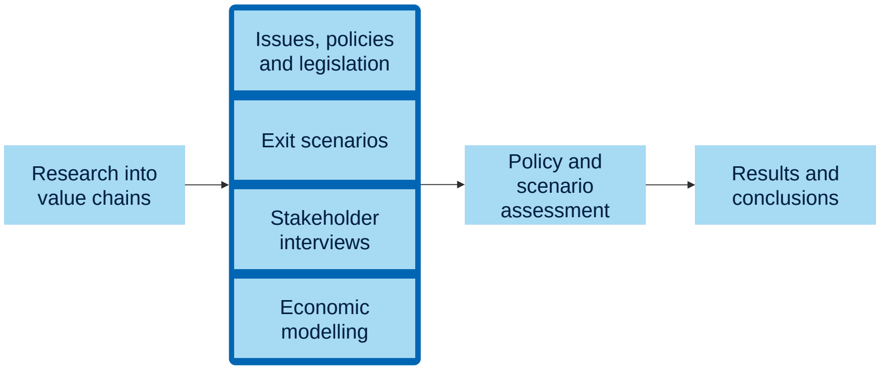
- laying out the understanding of the industry value chains—synthesising the complex value chains of each of the screen sector industries (film, TV, animation, VFX, and video games) to establish a common platform for describing changes to the industry, and to model the impacts of these changes;

[11] Each EFTA member signs its own bespoke, bilateral agreements with the EU. For the purpose of this report we have assumed that the UK would be able to reach the same agreement as Switzerland, although this should not be taken for granted. We have also assumed that this option includes leaving the EU Customs Union. The Swiss model has a number of specific arrangements as far as the AV sector is concerned, which we explain in more detail in sections 3 and 4.
[12] In this scenario the UK nonetheless continues to abide by international rules and regulations as required by the Berne Convention and the WTO—e.g. copyright.
[13] In many of the recent FTAs signed by the EU, the AV sector has been specifically excluded (e.g. CETA with Canada or the currently stalled TTIP with the USA). It is possible that some EU member states could push for excluding the AV sector in the deal with the UK as well.
[14] In this scenario there are likely to be dependencies between the individual policies that would require them to be accepted as part of a 'package' rather than stand-alone. This could put constraints on the UK being able to leverage all of the potential upsides.

- undertaking detailed research of the current issues, policies and legislation that affect the individual industries. In the process, we have benefited from expert legal assessments and opinions provided by Wiggin LLP;
- understanding the potential exit scenarios, and in particular the range of policies and legislation that are affected;
- holding extensive interviews with 20+ organisations across all five industries, focused on understanding their individual perspectives and incentives, and gathering useful data and case studies to populate our model (see below);
- gathering industry information and building a high-level economic model of the sector, capable of estimating the likely impacts of changes to the individual policies and legislation;
- drawing conclusions about the impact of changes of individual policies or overall exit scenarios, in terms of non-quantifiable cultural impacts and the modelled results on employment and output.

The individual workstreams, and their interdependencies, are presented in Figure 1.1.

Figure 1.1 Progress of preparation of this report



Source: Oxera analysis.

This report constitutes a comprehensive summary of research and analysis that took place over the course of two months between September and November 2016.

1.4 Overview of the report

The report proceeds as follows:

- section 2 gives an overview of the UK's screen sector, including the way it functions and its present contribution to the UK economy;
- section 3 outlines the individual policies and legislation that underpin the UK's screen sector and that could change as a result of the UK leaving the EU. We also consider the likely impacts of each of the individual policies changing in isolation, and in section 3.4 summarise an indicative list of priorities for the exit negotiations;
- section 4 lays out potential exit scenarios and the individual policies and legislation that would be affected under each, together with the potential impacts;
- section 5 concludes and lists avenues for further research;

- Appendix A1 lists the organisations consulted as part of this research;
- Appendix A2 contains a glossary of common terms used in the report;
- Appendix A3 explains our economic modelling, including the key assumptions behind the results throughout the report.

2 Overview of the UK's screen sector

A starting point for any explanation of policy changes is a common, consistent understanding of the context within which the changes are being made. In this section, we explain what we mean by the UK's screen sector, and highlight its present cultural and economic significance.

2.1 The sector in focus

The focus of this study is a subset of the UK's 'creative industries'—linked, in loose terms, with the AV contents—many of which benefit from different forms of tax relief under the current regime.

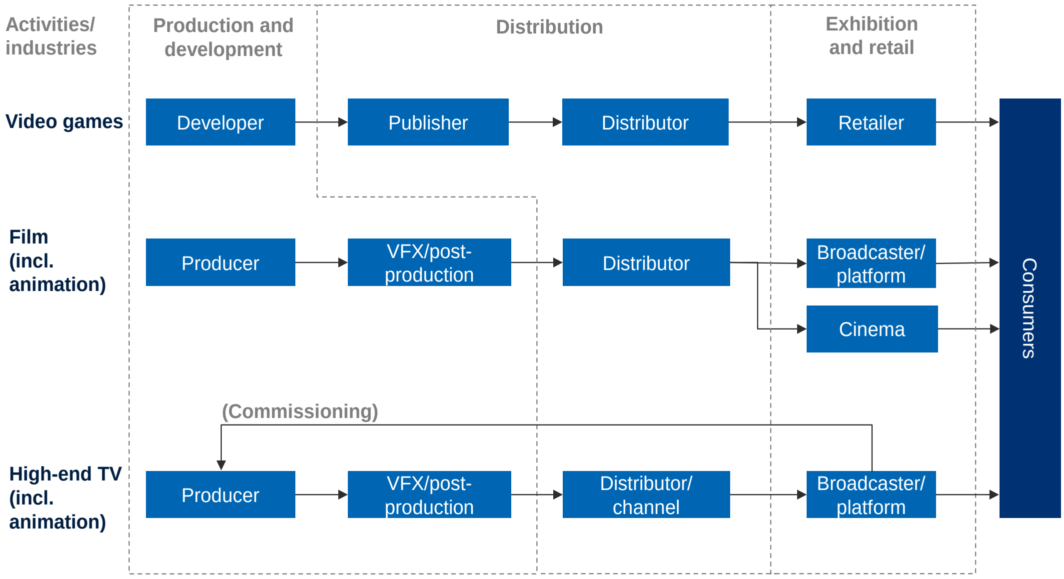
These industries are:

- **film**—all activities linked with the production, distribution and retailing of feature-length films within the UK;
- **TV**—as with film, but related to TV shows and programmes, including children's TV programmes. (Our qualitative assessment spans the whole TV industry, but the quantification is limited to the high-end part);
- **video games**—spanning all development, publishing distribution and retailing activity of video games across all platforms in the UK;
- **animation**—all activities linked with the creation of animated content for films and TV programmes, as well as feature-length animations;[15]
- **post-production and VFX**—all activities related to the creation of VFX for films and TV programmes, as well as any other post-production undertaken after completion of the principal photography for these films and TV programmes (our quantification spans VFX activities only).[16]

As such, for the purposes of this research, we treat film, TV and video games as primary industries, while animation and VFX are considered as inputs into the primary industries.[17] In light of this description, Figure 2.1 is a simplified value chain diagram for each of the main industries, which are explained in more detail below.

[15] All animation activity carried out for the production of video games is considered separately.
[16] VFX is of particular importance given that it generates substantive inward investment. However, it does not capture all the post-production activities, most of which, not included in the quantifications in this report, are concentrated around domestic non-high-end TV, but also include a part related to audio, digital intermediate, final grade and editing of international film and TV.
[17] The fully animated TV shows within the children's genre are counted as stand-alone outputs; similarly, feature-length animated films are counted as stand-alone films. All other animation activity is treated as an input into film and TV production.

Figure 2.1 Overview of the UK's screen sector value chain



Note: The production supply chain infrastructure (such as studios, location services, location crew, camera and lighting hire) is recognised in each 'Producer' box.

Source: Oxera analysis.

2.2 Film

Film producers, both major international production studios and independents, secure financing for their output and undertake all development, pre-production, VFX, principal photography and post-production. This process relies heavily on the free movement of people and equipment between filming locations. The film then goes through the post-production phase, where VFX,[18] picture post-production, audio post-production and music recording take place, and the film is edited to reach its final form (all of which amount to the production and development part of the value chain in Figure 2.1).[19]

Combinations of sales agents and distributors are subsequently in charge of selling the film across domestic and international territories and 'windows' of exploitation, in such a way that the film is released in cinemas across the world first, and thereafter made available as a home entertainment purchase, on pay-TV channels, on video-on-demand (VoD) platforms, or eventually on free-to-air TV. This process relies heavily on territorial and inter-temporal exclusivity, and typically involves several international distributors, broadcasters, platforms, etc.[20]

The crucial element underpinning film creation is bringing together financing across different sources, which enables the production to be made. This spans financial commitments from film distributors (in the form of distributor advances or pre-sales), public funding, loan financing, or own-producer funds. Depending on the type of content, the balance of different types of fund will differ greatly. For instance, independent films and co-productions may have 30–50% reliance on public funding (including tax relief), while major inward-investment productions from the Hollywood studios would receive only 5–20% of their total

[18] VFX can also take place during the production phase.
[19] Principal photography does not exist in all types of animated feature-length production. Where photography is used, it takes place at the animation house. However, for animated feature-length productions with no photography, all the work is conducted in specialist animation studios.
[20] Much of the production, post-production and sales/distribution activity can be vertically integrated in the case of the major production studios.

financing in the form of the UK's film tax relief.[21] Small changes to the current financing arrangements can have very significant impacts on the producers' willingness to make new content, especially independently produced content.

The UK film industry has grown over the years to play a significant part in the UK's economy, and is a crucial contributor to the country's cultural scene. Its highlights include the following:

- it employs around 61,000 people, of whom 42,000 work in film and video production; 65% of this workforce is concentrated in London and the South East;[22]
- in 2015, 201 feature films were produced in the UK, of which 124 were domestic, 30 were official co-productions, and 47 were inward investments. Film production spend is highly geared towards relatively few major, big-budget films—73% of all UK film spend in 2015 went to 15 productions with budgets in excess of £30m;[23]
- in 2015, all 759 films released in cinemas in the UK grossed approximately £1.3bn, of which 60% were 'specialised' releases—the less commercial and more 'culturally focused' productions whose share of box office takings was less than 4%;[24]
- UK films are very popular internationally, accounting for 20 of the top 100 titles by global box office takings in 2015. Independent UK films account for approximately 3–3.5% of both the North American and European box office revenues;[25]
- in 2014, total UK film industry exports were approximately £1.2bn (£519m in royalties and £655m in film production services), with a trade surplus of £715m. Approximately 44% of these exports were destined for the USA, followed closely by 38% to the EU.[26]

2.3 TV

At the outset, TV programmes tend to be commissioned by specific platforms, channels and broadcasters to fill particular scheduling needs.[27] While the remainder of the production process is closely aligned to that of films, this initial step in the value chain is crucially different. A complete TV programme or series would then be distributed internationally as a stand-alone programme or as part of an international channel. The second major difference is that TV programmes are not shown in cinemas, and make their way directly to VoD platforms, pay-TV and free-to-air television. As with film, the TV sector relies heavily on territorial and inter-temporal exclusivity of content, which attracts viewership (and advertising) to the viewing platform, broadcaster and/or channel.

[21] For instance, *The Lobster*—an internationally acclaimed co-production between Ireland, the UK, Greece, France and the Netherlands—relied approximately 55% on public funding, and 45% on pre-sales (based on information from the Fédération Internationale des Associations de Producteurs de Films). Major inward-investment productions tend to receive tax relief funding only and no other public funds, and are often made across multiple countries, resulting in relatively low reliance on UK public funds.
[22] British Film Institute (2016), 'Employment in the Film Industry', June. Numbers exclude an estimated 5,000 jobs in the VFX industry, listed separately below.
[23] British Film Institute (2016), 'Screen Sector Production in 2015', April.
[24] British Film Institute (2016), 'Specialised Films', June.
[25] British Film Institute (2016), 'UK Films at the Worldwide Box Office', June.
[26] British Film Institute (2016), 'The UK Film Economy', June,
[27] High-end TV is a part of the total TV industry, with the main difference being the production budget.

An important feature of the UK's TV sector is the presence (officially 'establishment') of numerous TV channels that are being broadcast across the EU from the UK. The editorial decisions for these channels (such as selection, content commissioning and editing) are undertaken in the UK. According to the latest statistics, the UK channel hub is the largest in the EU and houses approximately 1,100 channels, approximately 650 of which are non-domestic (i.e. intended for non-UK broadcast).[28]

Highlights of the TV sector in the UK include:

- in 2013, the overall industry employed approximately 106,000 full-time employees, split across production, post-production, sales/distribution, channels and broadcasting;[29] approximately 8,300 jobs are linked with high-end TV alone;[30]
- in 2015, 82 high-end TV programmes were produced in the UK, with a total spend of approximately £760m (up from £630m in 2014). Most high-end TV productions are series as opposed to individual shows—for example, *Game of Thrones*, *Galavant*, *Outlander*, and *The Night Manager*;[31]
- in the 2014/15 financial year, total TV industry exports (including but wider than just high-end TV) were £1.2bn,[32] with North America accounting for around 39% of these exports, and Europe for approximately 31%.

2.4 Video games

The video games value chain differs significantly to those of film and TV, as shown in Figure 2.1. Video games start with developers, who undertake all activities linked to conceptual design, development, programming, creation of artistic content, audio, music and voice recording within the game, and product testing. Publishers normally provide marketing services and support, and often contribute to the financing of game development. Numerous UK-based developers are contracted by international (mainly US-based) publishers (a similar phenomenon to Hollywood film studios undertaking film production in the UK). Since 2014, video game development has been eligible for Video Games Tax Relief.

Upon completion of production, the video game goes through international distribution channels and becomes available to consumers for purchase on a variety of channels (physical or online) and platforms (e.g. PC, PlayStation, Xbox, mobile games, and virtual reality platforms).

[28] Based on information received from Commercial Broadcasters Association (COBA).
[29] Estimated from total industry statistics and the known employment in the other sectors—see Table 2.1 below.
[30] Olsberg SPI and Nordicity (2015), 'Economic Contribution of the UK's Film, High-End TV, Video Game, and Animation Programming Sectors', February.
[31] British Film Institute (2016), 'BFI Statistics 2015: UK independent films win audiences in a blockbuster box office year', 28 January.
[32] TRP Research (2015), 'UK Television Exports FY 2014/2015'. Office for National Statistics data suggests a value of up to £2.3bn, see Office for National Statistics (2016), 'International Trade in Services, 2014', 29 January.

The UK video games industry:

- features around 2,000 companies and employs an estimated 12,100 people,[33] spread across 12 major hubs in the UK;[34]
- accounts for £2bn in global sales every year. An estimated 45% of the turnover of a UK games company flows from international sales.[35]

2.5 Animation

As noted above, the UK animation industry plays a twofold role in the UK's screen sector. On the one hand, it produces feature-length films and animated TV shows, in which case the value chain is very similar to those of film and TV, where layout and storyboarding, animation shooting and design take place at the production stage, with the one important difference in children's programming, where the sales of physical merchandise (e.g. toys, clothing, etc.) form an important revenue stream for distributors, and hence feed through to content financing. On the other hand, many films feature animated content, typically added at the post-production stage. This twofold role is reflected in Figure 2.1, whereby animation is either mirroring the film and TV value chains, or integrated within them at the post-production stage.

The industry as a whole is underpinned by highly skilled labour that requires expertise across computer software and art. These Science, Technology, Engineering, Arts and Maths (STEAM) skills are fostered throughout the UK's education system.[36] Nevertheless, the Arts component of STEAM might not be fostered to the same extent as the others, and a significant portion (up to 30%) of the talent employed in the UK animation industry comes from the EU.[37]

Highlights of the UK animation industry include:

- in 2013, it employed an estimated 1,300 full-time employees, split across production and the various forms of distribution;[38]
- over the last three years, the number of animation programmes made in the UK has been increasing. For instance, in 2015/16, 46 animation programmes passed the UK cultural test, and approximately 70% of their total budget was spent in the UK;[39]

[33] Olsberg SPI and Nordicity (2015), 'Economic Contribution of the UK's Film, High-End TV, Video Game, and Animation Programming Sectors', February. This estimate is considerably lower than the 24,000 estimated in Department for Culture Media and Sport (2016), 'Creative Industries Economic Estimates', p. 24.
[34] See http://www.nesta.org.uk/publications/map-uk-games-industry#sthash.OGda3pus.dpuf. The 12 regions are Brighton, Cambridge, Cardiff, Guildford and Aldershot, Edinburgh, Dundee, Liverpool, London, Manchester, Oxford, Sheffield and Rotherham, and Warwick and Stratford-upon-Avon. 29% of companies are in London, and a further 18% in the South East. See also http://ukie.org.uk/sites/default/files/UK%20Games%20Industry%20Fact%20Sheet%2004%20November%202016.pdf, p. 12.
[35] Ukie, 'The game industry in numbers'.
[36] See, for example, Creative Industries Council (2016), 'Creating a new world view', p. 18.
[37] Based on industry interviews and industry sources. See, for example, Creative Industries Council (2016), 'Creating a new world view', p. 18. We understand the main reason for this to be a lack of sufficient domestic talent. In 2011, Nesta thus made various recommendations aimed at fostering the development of the skills required for the video games and VFX industries in the UK. See Nesta (2011) 'Next Gen. – Transforming the UK into the world's leading talent hub for the video games and visual effects industries', February.
[38] Olsberg SPI and Nordicity (2015), 'Economic Contribution of the UK's Film, High-End TV, Video Game, and Animation Programming Sectors', February. These estimates are only for animation works receiving the animation tax break, and do not include revenue from merchandise.
[39] Owing to the extended period of production and time lag in reporting, this figure could be revised in the future. See Table 13 of http://www.bfi.org.uk/sites/bfi.org.uk/files/downloads/bfi-british-film-and-other-screen-sectors-certification-q3-2016.pdf.

- many of the major international producers (including Turner, Disney, Nickelodeon and Tinypop) have their European headquarters or major hubs in the UK.[40]

2.6 Post-production and VFX

Visual effects and post-production activity is an essential step in the making of films, TV programmes and video games, as shown in both the TV and film sectors value chains presented in Figure 2.1. Given that this work can take place during production and/or post-production, producers can freely choose to undertake VFX work outside of the UK to benefit from better financial terms.

The skillset required for this activity is similar to that of animation, and as such has a similar employment profile and challenges (see section 2.5 above).

Highlights of the UK's VFX industry include the following:

- it employed 5,300 people in 2013;[41]
- the use of VFX depends to a large extent on budget and genre. For large-budget films, an estimated 5–20% of the budget is spent on VFX;[42]
- spending on VFX is significantly higher for inward-investment features than for UK independent films, which tend to have more limited budgets and may not always use VFX in the production process.[43]

2.7 UK's screen sector—overall economic statistics

The UK's screen sector, combining all five industries, is a significant contributor not only to the UK's cultural diversity and heritage, but also to the economy.

2.7.1 Employment

As a whole, the UK's screen sector directly employs approximately 186,000 people.[44] This activity is supported by an estimated 178,000 indirect employees in all support services (e.g. logistics, catering)—see Table 2.1.

Table 2.1 Employment in the UK screen sector

	Direct employment	Indirect employment (approx.)[1]
Film	60,700	57,500
TV	106,600	100,000
Video games	12,100	11,800
Animation	1,300	3,400
VFX[2]	5,300	5,200
Total	**186,000**	**~178,000**

Note: The indirect employment of VFX and TV has been estimated using an approximate ratio of direct to indirect employees from the film and video games industries; other data has been based on industry numbers. TV employment has been estimated by deducting known employment in the other sectors from the UK's screen sector total. We used conservative estimates wherever possible. [1] No estimate was available for the wider post-production industry.

Source: BFI (2016), 'Employment in the film industry', June; Creative Skillset, 'Facts and Figures'; Olsberg SPI and Nordicity (2015), 'Economic Contribution of the UK's Film, High-End

[40] Based on interview input and Oxera's own research.
[41] http://creativeskillset.org/who_we_help/training_educators/standards/resource_packs/vfx/facts_figures
[42] British Film Institute (2013), 'BFI Response to HM Treasury Visual Effects Consultation'.
[43] Based on confidential BFI data; this captures the export of VFX services. Post-production constitutes an essential part of every production.
[44] Department for Culture Media and Sport (2016), 'DCMS Sectors Economic Estimates - Audio Visual', August.

TV, Video Game, and Animation Programming Sectors', February; Oliver & Ohlbaum Associates Ltd (2012), 'COBA 2012 Economic Impact Report', September; Department for Culture Media and Sport (2016), 'DCMS Sectors Economic Estimates - Audio Visual', August.

2.7.2 Gross value added

In terms of the economic contribution, the UK's screen sector delivered a combined direct gross value added (GVA) of at least £2.6bn in 2013, with film being the major contributor (see Table 2.2).[45] From 2013 to 2014, the film industry GVA alone increased by approximately 63% in nominal terms.[46]

Table 2.2 Total GVA of the UK's screen sector (£m, 2013)

	UK's screen sector	Approximate indirect contribution
Film	1,437	2,229
TV (only high-end)	382	470
Video games	755	674
Animation	54	117
VFX		Not applicable
Total	**2,628**	**3,490**

Note: Available studies do not cover GVA for the VFX sector. The Office for National Statistics reports a GVA of £2,626m for the film industry over the same period. ONS (2016), GVA Statistics.

Source: Olsberg SPI and Nordicity (2015) 'Economic Contribution of the UK's Film, High-End TV, Video Game, and Animation Programming Sectors', February; British Film Institute (2016), 'The UK Film Economy', June.

2.7.3 Trade

International trade is especially important to the UK's screen sector. In 2014, total UK film and high-end TV industry exports were approximately £1.2bn each. Film outputs achieved a trade surplus of £715m, rendering them one of the UK's major net exports.

[45] GVA is the measure of the value of goods and services produced in a particular industry, and represents the value of the industry's outputs minus the value of its inputs.
[46] British Film Institute (2016), 'The UK Film Economy', June, Figure 4.

3 Key legislation and policies affecting the UK's screen sector

3.1 Overview

As with many other parts of the UK economy, the current structure of the UK's screen sector is underpinned by a legislative and regulatory framework, much of which is linked to the UK being part of the EU. In the event of the UK's exit from the EU, and depending on the exact form of exit, certain parts of this framework may no longer be applicable in the UK, or could be repealed or modified. At the same time, UK companies may no longer be able to rely on key aspects of EU law when doing business across the EU.

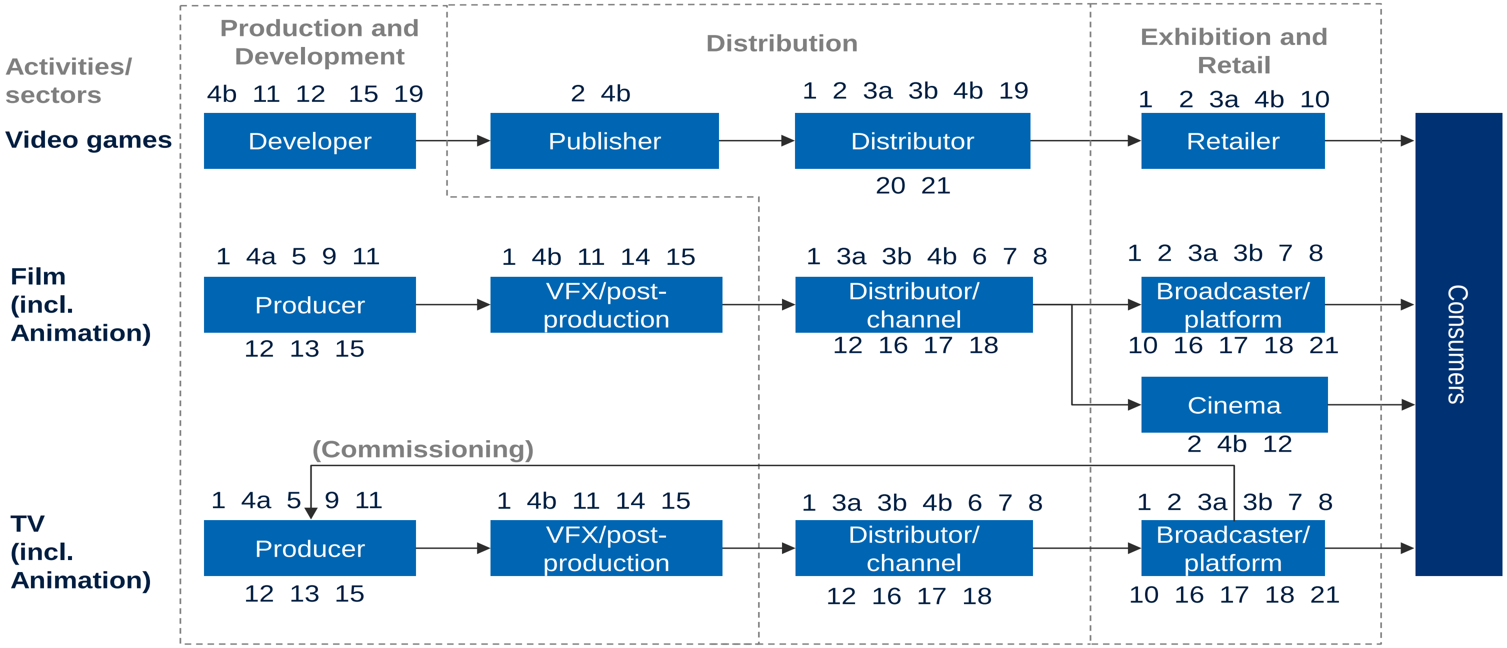
This section lays out the main aspects of the overall framework and their role today, and gives an overview of how these might change following exit, as well as an indication of the scale of the possible effects of exit on employment and content production.

Conceptually, the relevant policies, legislation and macroeconomic factors fall into six broad categories, as follows.

1. **Macroeconomic factors**—while not an element of policy as such, the UK's exit from the EU has already triggered changes to, and is likely to further affect, macroeconomic conditions, especially the exchange rate and both UK and international demand.
2. **Freedom of movement**—the UK leaving the EU might result in restrictions on the short- and long-term movement of people, and equipment, along with tariffs on physical goods.
3. **EU cross-border legislation**—EU membership enshrines policies relating to the consumption and creation of content across borders, such as portability reforms, changes to geo-blocking regulations, and co-production relationships.
4. **Funding**—the UK's membership of the EU and related institutions, such as Creative Europe, provides funding for content and its distribution across the parts of the screen sector value chain. The EU also determines state aid policy, which affects tax reliefs available for production and development activity in the UK.
5. **Policies contained within the AVMSD**—the Directive sets minimum standards for advertising and content regulations for broadcasters and channels across the EU. It also allows channels regulated in one member state to be made available without further regulation in all other member states, under the COOP.
6. **Video games-related issues**—a number of EU policies and legislation affect video games development and distribution specifically.

These policy areas affect different parts of the value chain of the UK's screen sector. Figure 3.1 shows where the direct impacts of the legislation and policies within these categories will fall within the value chain—the details are explained in the following sections. While each of the effects will have an indirect impact on other parts of the value chain, for simplicity we have focused our analysis on those areas most directly affected. Most of the remainder of this section considers the individual policies and legislation in detail. For a summary of the findings, see section 3.4.

Figure 3.1 Overview of the individual policies and legislation



Macroeconomic issues	Freedom of movement	Cross-border policies	Funding	AVMSD (TV and film)	Video games-specific areas	Other
1 Exchange rate	**4a** Short-term movement of people	**7** Reforms to copyright regulation in the EEA	**11** Tax reliefs	**16** ‘European work’ quotas	**19** Data protection regulation	**21** Divergence in regulatory regimes
2 Change in UK demand	**4b** Long-term movement of people	**8** Portability	**12** Creative Europe	**17** Content-based COOP in AVMS	**20** Establishment criteria	
3a Change in EU demand	**5** Freedom of movement of equipment	**9** Changes to co-production relationship	**13** ERDF	**18** Quotas on independent works		
3b Change in non-EU demand	**6** Tariffs	**10** Geo-blocking	**14** Horizon 2020			
			15 University funding			

Source: Oxera analysis.

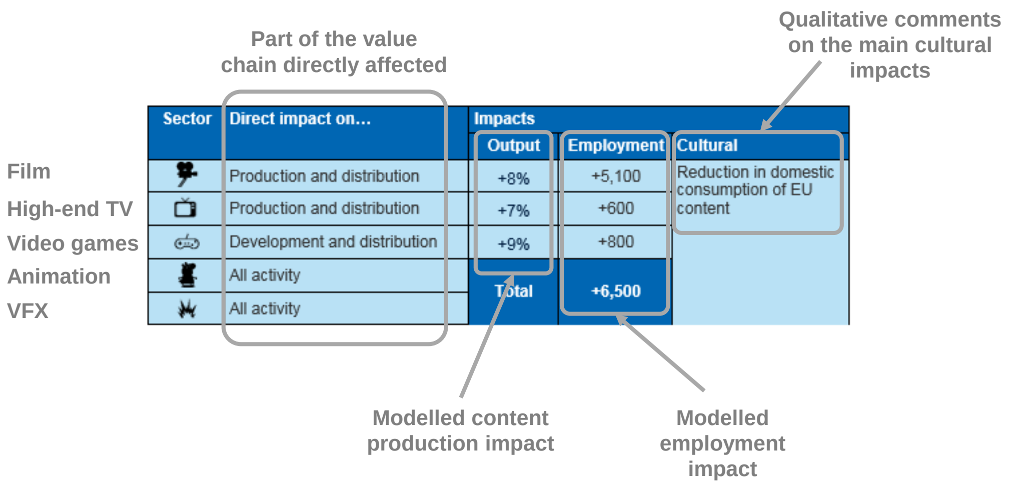
Each policy and legislation in the sub-sections below is labelled with a number corresponding to the number used to represent that policy or legislation in Figure 3.1.

Under each policy, legislation and regulation, we have included a summary table similar to that in Figure 3.2, highlighting:

- where the direct impacts fall within the respective screen sector industries;
- the modelled potential impact on content (or output) produced by a particular industry (measured in percentage terms relative to today);
- the modelled impact on employment within the individual industries, as well as the UK's screen sector as a whole (measured by the number of full-time equivalent employees);
- a qualitative indication of what the main cultural impacts would be, taking into consideration diversity of content source (i.e. the mix of studio and independently produced and developed works) and diversity in content (i.e. the mix of works depicting different cultures, languages and regional identities).

The reported values in each box are our baseline estimates for each policy or legislation. For some of these policies and legislations, the impact depends on the scenario—how these variables differ from the baseline (along with our modelling assumptions) is identified in Appendix A3. All estimated impacts are per year.

Figure 3.2 Guide to interpreting summary tables in this section



3.2 Key policies and legislation

3.2.1 Macroeconomic factors

The UK leaving the EU is likely to have an effect on macroeconomic variables, such as forex (exchange rates) and domestic and international demand for screen sector content.

1 Forex

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production and distribution	+8%	+5,100	Reduction in domestic consumption of EU content
	Production and distribution	+7%	+600	
	Development and distribution	+9%	+800	
	All activity	Total	+6,500	
	All activity			

Forex affects the price paid for products exported from, and imported into, the UK. This in turn has an effect on both the domestic and international demand. The scale of the impact to date has already been significant: sterling has depreciated 16% against the US dollar and 13% against the euro since the results of the Referendum were announced.[47]

Potential future changes

Forex between sterling and other currencies is likely to change further depending on the result of the negotiations between the EU and the UK. If the long-term effects of exit include reduction in UK growth and lower interest rates than anticipated by the currency markets, sterling will depreciate further against the euro and the dollar. If exit leads to higher interest rates and growth, an appreciation is likely. It is estimated that sterling could reach almost parity against the dollar by 2020, which means a further depreciation by 14.5%.[48] (At the time of writing this report, all these forecasts are changing frequently following the result of US elections.)[49]

Effects of changes

A change in forex affects the following parts of the value chain:

- **film and TV production facilities**—sterling depreciation increases the inward flow of the film and TV production activity because the relative price of these services is reduced;
- **the VFX and animation industry**—the VFX and animation industries in the UK are frequently used as part of the production and development processes for non-UK film and television programming as well as video games development. The UK facilities sector, which includes both of these industries, along with production facilities, derives 68% of its revenue from productions originating outside the UK.[50] Depreciated sterling increases the competitiveness of the VFX and animation houses based in the UK, and is likely to bring additional contracts and employment;
- **exporting distributors**—the relative price of content sold by UK sales to non-UK distributors decreases as a result of a depreciation in sterling,

[47] Exchange-rate figures are accurate as at 14 November 2016. See Bank of England (2016), Statistic Interactive Database.
[48] The Economy Forecast Agency (2016), Long Forecast.
[49] Changes to macroeconomic conditions in the EU and elsewhere could change the value of sterling relative to other currencies, leading to a potential appreciation relative to these currencies in the medium to long run.
[50] Olsburg (2010), 'The UK Facilities Sector'.

increasing consumption of UK film, television and video game content distributed outside the UK;

- **importing distributors**—the cost of non-UK content rises as a result of a currency depreciation, which will reduce the profits of distributors selling content into the UK, and/or potentially increase consumer content prices in the UK.[51]

Changes to the forex also change the relative wage between the UK and other countries. In the medium term, a depreciation in sterling could result in an outflow of labour to countries with higher relative wages, particularly in highly specialised parts of the value chain such as VFX, animation and video games development.

2 Change in UK demand

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Distribution and exhibition	0%	-300	General adverse impact on all content; independent content more affected than mainstream productions
	Distribution and exhibition	0%	0	
	Distribution	0%	0	
	Not applicable	**Total**	**-300**	
	Not applicable			

Domestic consumption underpins the economics of the UK's screen sector. It generates funds for broadcasters, cinemas and retailers, which pass on through the value chain all the way to the production activity. Domestic demand for screen sector content will change as a result of any changes in:

- **the population pool**—the UK leaving the EU might reduce population growth in the UK due to restrictions on inward migration. This could reduce the growth in demand for screen sector content associated with population growth;
- **disposable incomes**—the UK leaving the EU could result in a change in consumers' disposable incomes, most likely through a change in the economy-wide growth rate. This could in turn affect the consumption of screen sector content, with a fall in disposable income likely to reduce consumption of most goods and services;

Potential future changes

There is a wide range of estimates for the impact of the UK's exit from the EU on the UK economy as a whole, as measured by gross domestic product (GDP). Existing projections range from a loss of GDP of nearly four percentage points relative to the UK staying in the EU (reflecting a possible UK recession), to a gain of just over 1.5 percentage points (corresponding to the increased freedoms of operating under new FTAs).[52] The majority of the forecasts predict a domestic slowdown in growth, with an estimated GDP loss of around 2–3%.

[51] Importing distributors often report sales in dollars or euros. A depreciation of sterling also adversely affects their total revenues.
[52] All figures relative to projected annual growth of 2.1% per annum up to 2030. There are outliers within this range. For example, the National Institute of Economic and Social Research estimated a maximum impact of a fall of 9.6%, while Minford (2016) estimated a rise in growth of 4%. For a summary of these results, see

It is not clear how different settlements between the UK and the EU might affect UK aggregate demand, and demand for screen sector content specifically. There appears to be a consensus in economic commentary that a relatively 'light exit', such as EEA membership or joining EFTA, both of which would involve retaining free movement of people, would likely result in relatively small impacts on demand. The more involved exit scenarios, such as trading under WTO rules, would likely represent a major change in the shape of the UK economy, and thus the expected demand impact could be pronounced.

In any scenario, a fall in UK demand for screen sector content will reduce revenues to UK distributors, broadcasters, exhibition platforms and cinemas, with subsequent adverse impacts on the remainder of the value chains of each of these industries.

3a Change in demand for UK content from the EU

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Distribution and exhibition	-1%	-400	Limited/no impact, beyond less international exposure to UK content
	Distribution and exhibition	-1%	-100	
	Distribution	0%	0	
	Not applicable	Total	-500	
	Not applicable			

The EU is a major export market for the UK's screen sector. In 2014, UK total TV exports to Europe yielded £374m worth of revenues,[53] and EU film revenues from UK film exports in the EU were £197m.[54] [55] For video games, the EU corresponds to approximately 25% of global sales.[56]

Potential future changes

Perceptions of the UK and British cultural symbols may change across continental Europe as a result of the UK leaving the EU. Specifically, the negative publicity surrounding the exit negotiations, and the Europe-wide economic repercussions of the exit, could adversely impact demand for UK content outside of the UK. No studies have been conducted to date on the likely scale of these impacts.

A reduction in demand for British content would result in a reduction in the revenue that sales agents and distributors receive from distributing films across the EU. This effect is likely to be most prominent in film and TV, but less so in video games which do not tend to have such strong national characteristics.

London School of Economics (2016), 'The Impact of Brexit on Jobs and Economic Growth Summary'. Office of Budget Responsibility (2016), 'Economic and fiscal outlook'—November 2016 is consistent with this range.
[53] TRP Research (2015), 'UK Television Exports'.
[54] These numbers include the export of content only, not services (e.g. film production services).
[55] British Film Institute (2016), 'The UK Film Economy'.
[56] Newzoo (2016), 'Global Games Industry Report'.

3b Change in demand for UK content from the rest of the world

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Distribution and exhibition	+3%	+2,900	Positive impact on all types of output, although mainly mainstream
	Distribution and exhibition	+3%	+300	
	Distribution	+4%	+400	
	Not applicable	**Total**	**+3,600**	
	Not applicable			

The UK's screen sector exports extensively to countries outside of Europe. In 2014, for example, TV exports outside of Europe were £833m,[57] and film exports were worth £322m.[58] Globally, North America and Asia account for 72% of video games consumption, including for the UK's exports.[59]

Potential future changes

The UK leaving the EU is unlikely to have major macroeconomic impacts on countries outside the EU.[60] However, leaving the EU and the EEA would allow the UK to enter bilateral trade negotiations with countries outside of the EU. Such agreements are not permitted within the EU because EU-wide trade policy is not set by the individual member states.[61]

As such, the UK could negotiate bespoke trade agreements with China, India and the USA, for example, aimed at facilitating the trading of screen sector works.[62] Such agreements are likely to focus primarily on reducing non-tariff barriers, and maintaining the current zero tariffs.[63] Reducing tariff and non-tariff barriers between the UK and non-EU countries would be expected to stimulate international demand for UK goods and services, and thus translate into increasing the revenues of distributors exporting UK content outside of the EU.

Many FTAs explicitly exclude the AV sector as part of a cultural exemption, while others (including the KORUS agreement between South Korea and the USA) do not.[64] We have assumed throughout that the UK would be able to negotiate with non-EU countries an FTA that incorporates the screen sector.

3.2.2 Freedom of movement

Workers from the EU are employed across the UK's screen sector. If the UK were to leave the EEA, it is likely that freedom of movement between the EU and the UK would come to an end.[65] This would result in a reduction in both short-

[57] TRP Research (2015), 'UK Television Exports'.
[58] British Film Institute (2016), 'The UK Film Economy'.
[59] Newzoo (2016), 'Global Games Industry Report'.
[60] The International Monetary Fund estimates that the effect will be no greater than a reduction in GDP of 0.1% in these countries. International Monetary Fund (2016), 'World Economic Outlook Report', July.
[61] It is instead set according to a mandate agreed by the Council of the EU (which spans all the member states). See DG Trade (2013), 'Trade Negotiations Step By Step'.
[62] If the UK gives trade concessions on AV services to other countries, it will directly contravene the current EU trade policy and thereby potentially harm its future trade relationship with the EU.
[63] Non-tariff barriers include quotas; restrictions on freedom of movement of equipment and people; content regulations, and differing policy on data protection, for example.
[64] Song, Y. (2011), 'KORUS FTA vs. Korea-EU FTA: Why the Differences?', Korea Economic Institute, Academic Paper Series, **6**:5, May.
[65] EEA-only member states operate under a different legal framework to EU member states in regards to freedom of movement. For example, these states are able to unilaterally restrict freedom of movement if 'serious economic, societal or environmental difficulties of a sectorial or regional nature [are] liable to persist'

and long-term movement of labour, which would have an effect on many parts of the screen sector value chain. While this would represent a loss of flexibility of labour across the sector as a whole, there are some parts of the sector that would be especially affected due to current skills shortages, as discussed below.

Being a part of the EU also guarantees the free movement of goods and equipment across all EU member states. Losing freedom of movement could result in the reintroduction of carnets, which increase the inconvenience and cost of producing screen sector content in the EU,[66] as well as tariffs on physical goods.

4a Short-term movement of people

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production and distribution	-2%	-1,300	Adversely affects all types of output, especially co-productions Loss of freedom to participate in industry events, leading to loss of collaboration
	Production and distribution	-2%	-200	
	All activity	-2%	-200	
	Not applicable	**Total**	**-1,700**	
	Not applicable			

The production of film and TV content often requires short-term movement of production crews and talent across borders. Principal photography, in particular for major films and TV shows, as well as co-productions, often takes place in multiple locations. Membership of the EU allows for:

- UK production companies to easily film in multiple locations in the EU—approximately 17% of British productions shoot part or all of the principal photography in EU countries;[67]
- EU-based production companies to work easily within the UK—in 2014, UK inward production investment from the EU was worth approximately £249m;[68]
- freelance practitioners from both the UK and the EU to undertake contract-based assignments, often at short notice, in other EU member states;
- individuals from all EU member states to travel easily to industry gatherings, where new ideas are exchanged, technology is shared, and agreements are often struck on new productions.

Potential future changes

Freedom of movement arrangements would not change if, upon leaving the EU, the UK remained within the EEA, or joined EFTA.[69] (Other exit scenarios could lead to increased bureaucracy and cost associated with moving people across

(see European EFTA (2016), 'Agreement on the European Economic Agreement', Article 112). In practice, however, such emergency brakes are rarely applied and we assume that they would not be if the UK were to remain in the EEA.

[66] A carnet is a document that proves that a sum of money (or 'bond') is held in the producer's home country on the equipment and the bond will not be released until the equipment is returned to that country.

[67] British Film Institute (2016), based on data from BFI production database, 2006–15.

[68] British Film Institute (2016), 'The UK Film Economy'.

[69] While Article 112 of the EEA Agreement allows for restrictions in freedom of movement where 'serious economic, societal or environmental difficulties of a sectorial or regional nature liable to persist are arising', no EEA country has applied these restrictions. See EFTA (2016), 'Agreement on the Economic European Area'. We have assumed throughout that membership of both EFTA and EEA would be contingent on the UK government accepting free movement of labour.

borders between the UK and the EU. In the UK, for example, non-EU citizens working on a short-term basis in the AV sector must apply for a Tier 5 visa, which requires paperwork and costs approximately £230.[70] These visas may apply to EU citizens once the UK leaves the EU, and similar restrictions could be imposed on British workers in the remaining EU member states.

Such changes might discourage some production activity from taking place (or at least from the UK being used as a location for filming), and reduce the flexibility of the supply chain in responding to short-term demand increases (by being unable to easily compensate for a lack of domestic skills by allowing inward migration).

Finally, difficulties with short-term travel could imply a reduced presence of UK representatives at industry gatherings (e.g. festivals, sales events or conventions). This would make it more difficult for both UK distributors and sales agents to sell UK content into the EU, and for UK producers to exchange ideas and find partners for co-production at production festivals.[71]

4b Long-term movement of people

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production and distribution	-6%	-3,600	Loss of skills across all geographies and all types of content Some loss of access to other cultures, if migration reversed
	Production and distribution	-6%	-800	
	All activity	-5%	-600	
	All areas	**Total**	**-5,000**	
	All areas			

Many workers across the UK's screen sector are citizens of non-UK EU countries—this is estimated at 6% of all AV industry employment,[72] and up to 25–30% in animation, VFX and video games.[73] By virtue of freedom of movement, these individuals can easily seek both residence and employment in the UK, and changing employment is straightforward.

One of the main skill shortage areas among UK citizens, which at present is filled with an EU workforce, is the highly technical yet creative work needed by the animation, VFX and video games industries.[74] We understand from interviews, as well as some industry reports, that the current UK education system does not deliver the STEAM skills required for these industries as effectively as the systems in place in other EU countries.[75]

Furthermore, international sales and distribution activities across all five industries benefit from being able to employ native speakers of the required languages, which facilitates the establishment of content and achievement of favourable distribution agreements.

[70] See HM Government Tier 5 visa details, https://www.gov.uk/tier-5-temporary-worker-creative-and-sporting-visa/overview.
[71] Half of the 20 international festivals on the list of those eligible for support from the BFI International Fund are in the EU.
[72] Department for Culture, Media and Sport (2016), 'DCMS Sectors Economic Estimates - Audio Visual'.
[73] Ukie (2016), 'Ukie Supplementary Written Evidence to the House of Lords'.
[74] For more information on the skill shortage, see http://www.nesta.org.uk/sites/default/files/next_gen_wv.pdf.
[75] Creative Industries Council (2016), 'Creating a new world view', p. 18.

Potential future changes

Freedom of movement arrangements would not change if, upon leaving the EU, the UK remained within the EEA, or joined EFTA. In other exit scenarios, and assuming that government policy does not change, UK firms wishing to hire EU workers may:

- need to apply for Tier 2 visas for the highly skilled workers, which at present cost £575 per person;[76]
- pay the newly introduced Immigration Skills Charge, which is £1,000 per employee per year;[77]
- pay the Immigration Health Surcharge of £200 per employee per year of the visa;[78]
- not be able to hire non-UK workers for vacant positions with salaries below a threshold income level (currently £30,000 per annum).

There may also be quotas on the number of EU workers who can be employed by UK companies, further increasing the difficulty of hiring these workers.

Another possibility is that EU workers would count towards the current quotas set for the number of non-UK workers eligible for Tier 2 visas.[79] Unless the current quota on this is increased, such a policy would limit further the number of non-UK (including EU) workers that companies could hire in general.

As EU staff are very important to a number of parts of the screen sector value chain, increased cost and difficulty in recruitment could lead to a reduction in the competitiveness of UK-based screen sector companies (in terms of price and quality of output). It will also reduce the short- to medium-term productivity of the sector as firms will be unable to substitute EU workers with equivalently skilled UK national workers—particularly for VFX, animation, video games and international sales/distribution, which require specific skillsets and experience.[80]

Loss of long-term freedom of movement might also restrict the hiring of academics by universities. It is estimated that as many as 15% of staff at UK universities could be lost if there are restrictions on freedom of movement.[81] This would reduce the quality of tuition at these institutions, in turn having an adverse impact on the skills of UK graduates, and hence the overall productivity of the screen sector.

[76] UK government website, https://www.gov.uk/tier-2-general/overview.
[77] UK government website, https://www.gov.uk/government/news/governments-new-immigration-skills-charge-to-incentivise-training-of-british-workers.
[78] https://www.gov.uk/healthcare-immigration-application/how-much-pay
[79] The current cap on Tier 2 visa is 20,700, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/261521/tier2-soi-transitional-measures.pdf
[80] In the long term, a reduction in the EU workforce might incentivise the government and screen sector to invest in training, increasing the skills of the domestic workforce. This effect is beyond the scope of our assessment.
[81] *The Guardian* (2016), 'Brexit fears may see 15% of UK university staff leave, group warns', 25 September. See also Scientists for EU (2016), 'Factsheet', http://scientistsforeu.uk/wp-content/uploads/2016/02/SfEU_factsheet_12-2-2016.pdf.

5 Movement of equipment

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production	-1%	-300	Affects all productions that film outside the UK
	Production	-1%	-100	
	Not applicable	0%	0	
	Not applicable	**Total**	**-400**	
	Not applicable			

At present, equipment for the shooting of TV and film content can be transported easily between EEA countries, as the freedom of movement of goods, including AV equipment, is one of the key elements of the Internal Market. This means that UK producers do not need carnets (or any other special documentation) to prove that they are transporting goods for short-term use, rather than sale, to EEA countries. Such documents are nonetheless required in the case of non-EEA countries, such as Switzerland.[82]

Potential future changes

Freedom of movement of equipment would not change if the UK were to remain in the EEA. A similar bilateral agreement with the EU could also be reached under EFTA or WTO exit scenarios.[83]

If the UK were not a member of the EEA after leaving the EU, and did not secure a specific agreement on the movement of equipment, UK producers would need to apply for carnets or carnet-like documents in order to transport equipment to EU countries, and vice versa. This would increase the cost for UK producers associated with filming outside the UK, hence disincentivising such activity, and might reduce the extent to which EU film producers choose to shoot in the UK. Overall, changes in this policy area are likely to affect both producers and demand for production facilities in the UK.

6 Tariffs

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Distribution	0%	0	No impact (assuming no new tariffs are introduced)
	Distribution	0%	0	
	Distribution	0%	0	
	Not applicable	**Total**	**0**	
	Not applicable			

As noted above, EU membership guarantees the freedom of movement of goods. Currently, tariffs are placed on many physical products imported into the EU. However, physical goods in the screen sector (e.g. Blu Rays, video games and DVDs) are not subject to tariffs.[84]

[82] Switzerland Federal Customs Administration website, http://www.ezv.admin.ch/zollinfo_firmen/04203/04306/04314/05209/index.html?lang=en.

[83] Switzerland, the largest member of EFTA not a member of the EEA, does not have a freedom of movement of equipment agreement with the EEA.

[84] European Commission (2016), TARIC measure information.

The delivery of content to exhibition platform owners, such as cinemas and pay- and free-to-air television platforms, tends to be performed electronically, and is not subject to tariffs in the EU. Tariffs are also not applied to production companies that use UK-based services, such as production studios and VFX and animation studios.

Potential future changes

Tariff arrangements would not change if, upon leaving the EU, the UK were to remain in the EEA or join EFTA. If the UK were to trade under WTO rules, tariff arrangements on Blu Rays and DVDs could be introduced between the EU and the UK. The likelihood of this happening is limited, given the lack of any tariffs within the screen sector at present, albeit such a move cannot be ruled out as an adverse outcome of the exit negotiations. Under WTO rules, tariffs cannot be placed on video games.[85]

The imposition of tariffs would have two effects:

- tariffs on UK exports to the EU would increase the cost to European consumers of products exported from the UK. This would reduce the revenues to UK producers and distributors associated with the export of these products, and thus affect the international export-focused distributors in the UK;
- tariffs on UK imports from the EU would result in a price rise for UK consumers, which would reduce demand, lowering the revenues of domestic distributors of internationally produced goods.

3.2.3 Cross-border policies

At a high level, the 'cross-border policies' are aimed at achieving a Digital Single Market for content and copyrighted material. While there are no tariff barriers in place within the EU, an important barrier from the perspective of the European Commission are contractual and copyright restrictions (often along national territories) that prevent full or unconstrained availability of screen sector content and services across the EU. Recent Commission policy initiatives have sought to break down these barriers, for instance:

- the ongoing Directorate-General for Competition pay-TV case tackling passive sales restrictions;
- proposed Regulation on Cross-Border Portability of AV content;
- proposed Broadcaster Regulation, spanning (a) extension of the Satellite and Cable Directive's COOP to certain online services; and (b) extension of the mandatory collective licensing to facilitate the retransmission of channels in IPTV networks, in addition to cable networks as per the Satellite and Cable Directive.

Finally, this category also includes rules governing co-productions (which are currently not being reviewed).

UK producers and distributors may avoid these changes only when selling to domestic exhibitors. Any contractual agreements or sales made by these companies in the EU would need to adhere to these policies.

[85] World Trade Organization (2016), 'Briefing note: The Expansion of Trade in Information Technology Products (ITA Expansion)'.

Below, we go through these proposals and what they might mean for the UK's screen sector in detail.

7 Avoiding EEA cross-border copyright reforms

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Distribution and broadcasting/platforms	+2%	+800	Positive impact on all films and TV programmes that are exported (mainly mainstream, some independents)
	Distribution and broadcasting/platforms	+1%	+100	
	Not applicable	0%	0	
	Not applicable	**Total**	**+900**	
	Not applicable			

The European Commission has proposed several reforms to the current body of EU copyright law. In addition to a Proposed Regulation on Portability and a Directive on copyright (both explained separately below), the Proposed Broadcaster Regulation will have an important impact on the UK's screen sector. This proposed regulation utilises two rights clearance mechanisms from the Satellite and Cable Directive, which at present governs transmissions only via the traditional means of broadcast—satellite and cable. One of its key elements is the COOP in relation to copyright.[86] In this context the COOP establishes that the copyright-relevant Act takes place:

> solely in the Member State where, under the control and responsibility of the broadcasting organization, the programme-carrying signals are introduced into an uninterrupted chain of communication leading to the satellite and down towards the earth[87]

This means that the rights for a piece of content need to be cleared only for the 'country of origin' of the broadcast, not for the country/ies of destination. This allows a satellite broadcaster to broadcast content across the EU having cleared copyright in one member state. This legislation affords satellite and cable broadcasters the ability to sell content and services to consumers outside of the country in which they have purchased content rights.[88]

As part of the Digital Single Market framework, the Commission proposed a review of the Satellite and Cable Directive.[89] Specifically, the Commission has proposed the expansion of copyright-based COOP to broadcasters' ancillary online services (simulcast, catch-up and promotional materials) and an extension of the mandatory collective licensing regime for retransmission of broadcast channels by cable operators to Internet protocol television (IPTV), digital terrestrial television, satellite and mobile platforms.[90]

Other potential future changes to copyright regulation in the EU include a recent competition case surrounding passive sales. In July 2015, the Commission

[86] European Commission (1993), 'Council Directive 93/83/EEC of 27 September 1993 on the coordination of certain rules concerning copyright and rights related to copyright applicable to satellite broadcasting and cable retransmission', Chapter 1, Article 2.
[87] Ibid.
[88] The Directive allows rights holders to limit the active sale of content across borders when content is licensed on a territorial basis.
[89] European Commission (2016), 'The Satellite and Cable Directive'.
[90] This review led to the publication of the Proposal for a Regulation laying down rules on the exercise of copyright and related rights applicable to certain online transmissions of broadcasting organisations and retransmissions.

issued a statement of objections relating to contracts between Sky and production studios that restrict Sky from responding to requests for service from potential customers outside of the UK.[91] The case is ongoing and no specific recommendations are known at present.[92] The EU is also harmonising, across member states, legislation relating to exceptions to copyright regulation—for example, when works are used for educational purposes—as it has previously with the use of orphan works (where the copyright holder is not contactable) for certain non-commercial purposes.[93]

Other changes to copyright regulation proposed by the Commission include proposals that would provide wider opportunities to use copyrighted materials in education, research and cultural heritage, and the maintenance of a better-functioning copyright marketplace. These have not been considered in our analysis.[94]

Potential future changes

Under EEA membership, the UK would still be covered by all of the proposed changes to copyright regulations discussed above. Under EFTA or WTO scenarios, the UK could adopt the legislation unilaterally, although it may not be able to influence the final wording.[95]

In a recent report, we demonstrated that although the Commission's proposals on cross-border access are intended to increase the availability of content across Europe, they are likely to result in significant adverse short-term impacts, and that the medium- to long-term consumer outcomes would be worse than they are today.[96] In particular, consumers would be worse off because less content would be made. Undermining the current system of exclusive and territorial licensing would reduce revenues to producers and distributors, which would reduce investment in content, resulting in less content being produced. Our report concluded that consumer welfare losses resulting from these changes could be as large as €9.2bn a year across the EU.[97]

This effect would materialise fully if the UK remained bound by the copyright regulation changes (i.e. in the status quo and under the EEA exit scenario). Even if the UK were not bound by it, any content sold and distributed within the EU (mostly films and TV programmes) would still be affected, and would therefore generate less revenue than today. The major exception would be that the UK, as a territory, would not be subject to the same rules; that is, UK

[91] European Commission (2015), 'Statement of objections ("SO") in Case AT.40023: Cross-border access to pay-TV content'.
[92] However, one of the studios, Paramount, has offered concessions in the case with the Commission. See European Commission, 'Antitrust: Commission accepts commitments by Paramount on cross-border pay-TV services'.
[93] European Commission (2001), 'Directive on the harmonisation of certain aspects of copyright and related rights in the information society'; and European Commission (2012), 'Directive on certain permitted uses of orphan works'.
[94] The EU harmonises the protection of rights holders via copyright legislation. This important role of the EU is not considered in this section, which covers only the proposed changes to the regulation of copyright across borders.
[95] Even if the UK did not choose to unilaterally adopt these policies upon reverting to WTO rules, it would be subject to other copyright regulations, such as the Berne Convention for the Protection of Literary and Artistic Work.
[96] Oxera (2016), 'The impact of cross-border access to audiovisual content on EU consumers', May.
[97] This report assumed that the Commission was to include subscription video-on-demand (SVoD) services as part of these changes, which is not necessarily the case. However, in practice the application of the Satellite and Cable Directive to just simulcast and catch-up services would have a similar effect to those estimated in our report on the impact of pan-EU cross-border access, see above.

broadcasters' willingness to pay for UK-produced content would be largely unaffected.

On the whole, therefore, changes to copyright regulations are likely to have an adverse impact on the UK's screen sector, and, while leaving the EU offers a way of mitigating the impact, no exit scenario is able to offset it fully.[98]

8 Avoiding portability reforms

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Broadcasting/platforms	0%	+200	No impact
	Broadcasting/platforms	0%	0	
	Not applicable	0%	0	
	Not applicable	**Total**	**+200**	
	Not applicable			

As part of the Digital Single Market, the Commission has recently developed a proposal to allow travelling EU or EEA citizens to view content available via a domestic online platform in their home member state. This 'portability' of AV services would be enabled while the citizens are outside their country of residence, and only for a limited amount of time.[99]

Portability poses some potential logistic issues for broadcasters and platform owners. For example, UK-based broadcasters may be forced to have a log-in process that requires the user to provide a UK address. This may pose particular problems for services that currently do not require sign-up.

Potential future changes

Regulation governing portability is likely to apply to EEA members, although this is not currently made clear in the proposed reform package. It will not automatically cover members of EFTA or the WTO.

If the UK were not subject to portability regulation, broadcasters would not have to invest in the implementation of portability arrangements, provided they operate in the UK only. This would translate into a reduction in costs, which would increase productivity relative to the case where UK-based broadcasters must fully implement portability.[100] Overall, the impacts of avoiding this regulation are not likely to be large.[101]

[98] For the purposes of this report, we have assumed that if the UK left the EEA, the Commission would not be able to force the UK to uphold any of the changes to copyright legislation and any decision made in the competition cases discussed above.
[99] European Commission (2015), 'Regulation on ensuring the cross-border portability of online content services in the internal market'.
[100] We have explicitly assumed that the portability regulation will be introduced so as not to lead to complete cross-border access to all AV services.
[101] Consumers may be worse off if portability is not implemented in the UK. This small loss in consumer welfare is not explicitly considered in our analysis.

9 Changes to the co-production relationship

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production	-3%	-900	Significant adverse impact on all co-productions, which tend to be more culturally focused Loss of cultural diversity
	Production	-1%	-100	
	Not applicable	0%	0	
	Not applicable	Total	-1,000	
	Not applicable			

Co-productions are films and TV programmes involving multiple producers jointly financing or producing content in return for an agreed proportion of the proceeds and/or rights to distribute or broadcast the content in a given territory.[102] International co-productions are those where two or more producers are based in different countries. The UK is a signatory of the European Convention on Cinematic Co-Production (ECCC), which governs most co-production arrangements between the UK and other EU countries.[103]

Ratified by 43 Council of Europe member states, the ECCC stipulates the financial and creative contribution a member state must make to qualify a work for co-production status. It also specifies that signatories are required to facilitate entry and residence, as well as the granting of work permits in its territory, for technical and artistic personnel from other parties involved in a co-production.

Co-production treaties have the benefit of allowing films to qualify as official 'national' products under the AV policy regimes of individual EU countries.[104] Being an official co-production under the ECCC allows the work to gain official national/domestic work status of all of the signatories involved in its production without having to pass an additional cultural test. Qualifying for official national status allows the work to access tax relief and public funding, and enables its qualification for national quotas for both domestic content and co-productions, if relevant.

Box 3.1 Example of UK-French co-production

For example, the UK has a bilateral treaty with France that allows UK–French co-production films to qualify as 'French', automatically qualifying the production for state funding. In addition, the three free-to-air networks (TF1, France 2 & France 3, M6 & W9) have to invest 3.2% of their revenue in pre-buys and co-productions of French-qualified movies. Finally, French films qualify for tax breaks not available to international productions using French facilities.

Source: Film France (2016), 'The Incentives Guide'.

Our interviews suggest that co-production status often acts as a means of unlocking additional financing from other sources. For this reason, while the actual level of co-production financing is relatively small for all types of content, we have assumed that the associated effects on other financing sources are significant.

Co-production allows independent producers to raise sufficient financing to produce a film or television programme that may not otherwise have reached its

[102] Video games do not have an official co-production facility or regulation.
[103] With the exception of France, with which the UK has a separate bilateral treaty (see Box 3.1).
[104] See, for example, British Film Institute (2016), 'The Cultural Test for Film'.

financing target. In 2015, 30 independent British films were co-produced overall, approximately 75% of these with members of the ECCC.

Co-production may be particularly important for producers in some UK regions and nations—in Wales, for example, 24% of all films co-funded by Ffilm Cymru Wales (formerly known as Film Agency for Wales) in the last ten years are EU co-productions.[105]

Potential future changes

The ECCC is not an instrument of the EU, but of the Council of Europe, and the UK would remain a member of the Convention irrespective of its final arrangement with the EU. However, as noted above, ECCC signatories must facilitate entry and residence of crew and talent. If the UK were to leave the EEA, it would have to facilitate the entry and residence for personnel working on a co-production with another member of the Convention in order to uphold its commitments under the ECCC. If the UK did not adequately facilitate entry of equipment and labour, it would not remain a member of the Convention.

It is difficult for a signatory of the ECCC to be ejected as the text of the Convention does not provide for this. However, if a contracting party fails to respect its obligations, other contracting parties (in the absence of a formal procedure or means of enforcement) might take measures, such as not respecting their Convention obligations towards the party in question.

If the UK were to leave the ECCC, not only would the base co-production financing received by virtue of works being official co-productions be affected, but also the associated mechanisms linked to generations of financing would be unwound. This is likely to affect the viability of co-production projects, to the detriment of the overall cultural diversity that they bring.

10 Avoiding changes to geo-blocking regulation

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Broadcasters and platforms	0%	0	No impacts
	Broadcasters and platforms	0%	0	
	Not applicable	+1%	+100	
	Not applicable	**Total**	**+100**	
	Not applicable			

EU citizens who want to purchase physical or electronic sell-through (EST) copies of screen sector products online are generally restricted by retailers to purchasing those products in their home countries. Retailers achieve this by geo-blocking: limiting consumers' access to websites outside their home territory. The total market for home entertainment (physical video retail and rental) in the UK in 2015 was worth approximately £774m.[106]

The Commission has recently proposed a regulation on geo-blocking,[107] as a result of which EU-based retailers of physical goods, including film and TV show DVDs or Blu Rays, and video games across all platforms, would not be able to

[105] Email correspondence with Ffilm Cymru Wales.
[106] British Film Institute (2016), 'The UK film market as a whole', August.
[107] European Commission (2016), 'Proposal for a Regulation on geo-blocking'.

refuse to sell goods to customers in other member states. The regulation does not cover EST or streaming services, and does not require traders to supply delivery to territories that they do not currently serve.[108]

Potential future changes

If the UK were to leave the EEA, UK-based retailers would not be required to adopt the proposed regulation on geo-blocking. Given the relative price differences between physical formats in the UK and some parts of the EU, some UK customers would be likely to purchase goods covered by the regulation from retailers based in other EU countries, if they were able to. If the regulation did not apply to UK-based retailers, the revenues of retailers selling screen sector-related physical goods in the UK would be larger than if the regulation did apply.

3.3 Funding

Screen sector content is financed by a wide range of sources, including producers' and developers' private funds, distributor or publisher advances or pre-sales, bank loans, and a range of public funds, including tax relief and numerous support programmes. Of these sources, both tax relief, which is granted by the UK government but currently restricted by EU state aid regulations, and the support programmes could change as a result of the UK leaving the EU.

11 Tax reliefs

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production	+3%	+1,200	Significant opportunity for all types of content
	Production	+2%	+100	
	Development	+3%	+300	
	All	**Total**	**+1,600**	
	All			

The UK has tax relief for film, high-end TV, animation, children's TV and video games. In each case, the developer or producer can claim a payable cash rebate on UK-qualifying expenditure. For instance, the film industry received total tax relief of £340m in 2015/16.[109] Since the Video Games Tax Relief was launched it has provided approximately £45m to UK video games developers.[110]

The rules for tax relief are governed by EU state aid law.[111] Although the precise requirements for qualifying for tax relief vary between each type of AV content, the qualifying criteria for each type of tax relief include:

- **a 'cultural test' to be passed or official co-production status to be gained**. The cultural tests grade content according to its relevance with

[108] Ibid.
[109] HM Revenue and Customs (2016), 'Creative Industry Statistics'.
[110] Ukie, 'The games industry in numbers'.
[111] European Commission (2016), 'Commission declaring certain categories of aid compatible with the internal market in application of Articles 107 and 108 of the Treaty'. Apart from script writing, development, distribution or promotion, aid granted for specific production activities is not allowed. Consequently, the aid must not be reserved for individual parts of the production value chain. Any aid granted to the production of a specific AV work should contribute to its overall budget. The producer should be free to choose the items of the budget that will be spent in other member states. This is to ensure that the aid has a neutral incentive effect. The earmarking of aid to specific individual items of a film budget could turn such aid into a national preference to the sectors providing the specific aided items, which would be incompatible with the Treaty.

European culture, with marks given for the feature's setting in an EEA country, EEA crew, and cast members or main characters being EEA residents or citizens. Alternatively, film projects can be an official British co-production under the ECCC or one of the UK's bilateral co-production treaties, some of which also allow TV co-production (see point 9 above).

- a **minimum** UK or EEA spend proportion of the total production cost.

In each sector there is also a cap on the core expenditure that can be claimed for tax relief (currently at 80%). The specific requirements for tax relief for animation, film, high-end TV and video games are shown in Table 3.1, together with the amount of relief available.

Table 3.1 UK tax relief for film, high-end TV, animation and video games

	Film	High-end TV	Animation	Video games
Rate	25%	25%	25%	25%
Minimum spend requirement	At least 10% of core expenditure is incurred on goods or services used or consumed in the UK	At least 10% of core expenditure is incurred on goods or services used or consumed in the UK	At least 10% of core expenditure is incurred on goods or services used or consumed in the UK	At least 25% of core expenditure is incurred on goods or services provided from within the EEA
Cap on qualifying expenditure	80%	80%	80%	80%
Other requirements	Qualify as a British film The film must be intended for theatrical release	The programme must be certified as British A slot length per episode of greater than 30 minutes Average core expenditure per slot hour of not less than £1m The programme should be intended for broadcast to the general public The content cannot be a game or quiz show, a broadcast of a live event, or a news, current affairs or discussion programme	At least 51% of the total core expenditure is on animation. The content cannot be a game or quiz show, a broadcast of a live event, or a news, current affairs or discussion programme	The video game is intended for supply

Note: Tax relief is also available for children's TV at the same rates, caps and requirements as the high-end TV relief, except that the programme must also be for children—specifically, the primary audience is expected to be under the age of 15.
Source: British Film Institute.

Thus, in practice, for a French–UK co-produced film, where half of the production takes place in the UK, the UK tax relief would amount to 12.5% of total film budget (and the production would be eligible for the French tax relief on that portion of the spend).[112] For a fully UK-produced film that passes the cultural test, tax relief would be 20%.[113]

Under EU law, tax reliefs (or credits) are generally considered to be state aid, but many sectors are subject to special exemptions. For film, animation and TV programming (but not video games), state aid is permitted by Article 54 of the General Block Exemption Regulation (GBER). The UK tax relief scheme must adhere to this provision and more generally to EU law. For example, aid is permitted only if it supports a cultural product, which must be defined by member

[112] 25% on 50% of spend, or 12.5% of total film budget.
[113] 25% on the capped 80% of total spend, or 20% of total film budget.

states according to a predetermined list of cultural criteria. Furthermore, the Article limits:

- the maximum expenditure that can be claimed for tax relief for any single work to 80%;
- the total aid intensity for a single work, which must not exceed 50% of the eligible costs;[114]
- the required minimum level of domestic spend for aid eligibility to 50% of the overall production budget.

Aid to the video games industry does not fall under Article 54 of the GBER.[115] Tax relief regimes for video games in the UK and France have been permitted by the Commission, although they assess these regimes on a case-by-case basis.

Box 3.2 UK and Canadian tax relief systems

During our interviews, a number of stakeholders cited Canada as an example of a competitor to the UK for inward film, TV and VFX investment. In Canada, refundable federal tax relief is equal to 16% of the qualifying labour paid to Canadian residents during the making of a qualified production, net of provincial tax reliefs. Provincial tax reliefs are also available: depending on the Canadian province, producers from outside Canada can access combined federal and provincial tax reliefs ranging from 32% to 70% of eligible labour, as well as tax incentives on local qualifying spend ranging from 20% to 30%.

Source: Canada Film Capital website, see: http://www.canadafilmcapital.com/Tax-Credit-Overview.aspx, last accessed 25 November 2016.

Potential future changes

EEA members are subject to EU state aid law. If the UK were to leave the EEA, it would not be subject to these rules, and would in theory be able to change the level and structure of the tax relief available. As part of its negotiations with the EU, the UK may be required to abide by EU state aid law. In this case, tax relief may not be able to change even if the UK were to leave the EEA.

WTO membership also carries state aid restrictions. Members of the WTO are prohibited from imposing import and export tariffs per se, and may also be prohibited from other state aid practices if they have adverse effects.[116] However, these adverse effects are more difficult to establish than under EU state aid law and may be sustainable since enforcement may be difficult.[117]

An increase in the level of the tax break would have the potential to increase UK production, development and VFX spend. For example, a recent report found that for each £1 of Film Tax Relief (FTR) granted across the period 2006/07 to 2013/14, £12.49 in additional GVA was created through direct and multiplier effects.[118]

Changes to the structure of the tax relief regime may also have an impact on the amount and type of activity producers and developers undertake in the UK. For example, the current 80% qualifying cap on spending, as required by EU state

[114] For film and television, this cap is 60% for official co-productions and there is an exemption from the cap for 'difficult projects'. This does not apply to video games.
[115] Aid to the video games industry is governed by the general exemptions to the prohibition of state aid law under Article 107(3)(d) of the Treaty on the Functioning of the European Union.
[116] WTO (2016), 'Agreement on Subsidies and Countervailing Measures'.
[117] EU state aid law also provides for a far more comprehensive and stringent enforcement mechanism than that provided under WTO rules.
[118] Olsberg SPI and Nordicity (2015), 'Economic Contribution of the UK's Film, High-End TV, Video Game, and Animation Programming Sectors'.

aid rules, can disincentivise spending on VFX in the UK, as productions may reach the cap before the post-production stage. These producers will receive additional tax relief if they base post-production in another country, such as Canada. If the cap were to be lifted, producers might be more willing to locate more of the production activity in the UK, without needing to go abroad.

12 Creative Europe MEDIA programme funding

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production, development and cinemas	-7%	-2,000	Significant loss of diversity in specialised/culturally focused content, mainly TV and film Adverse impact on independent cinemas across the country
	Production, development and cinemas	-4%	-300	
	Development	0%	0	
	Not applicable	**Total**	**-2,300**	
	Not applicable			

The largest funding programme for screen sector content in the EU is the Creative Europe MEDIA programme, which contributes funding to the development, production and distribution of works in the EU along with a number of non-EEA countries. The total budget for this initiative across the EU currently stands at €103.4m per annum.[119] For 2014 and 2015, the Creative Europe MEDIA programme had invested €28.5m in the UK's screen sector.

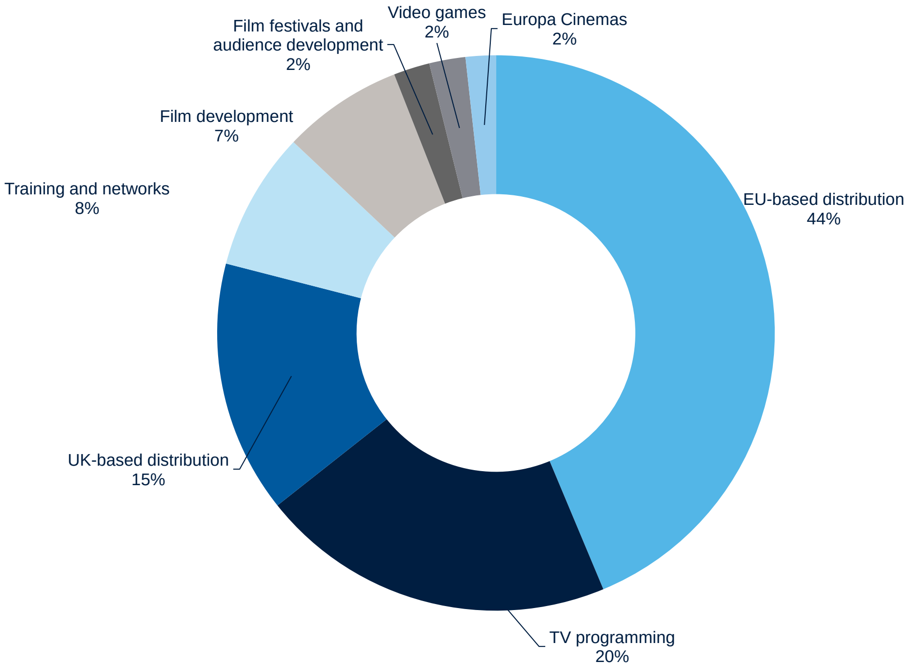
The MEDIA programme offers wide-ranging support and funding across the screen sector. Some of the key facets of the programme include:

- **funding for producers and developers**—the programme offers funding for the development of single films, co-productions or film slates, as well as for television production and video games development;
- **support for distributors and sales agents**—qualifying distributors, sales agents and online distributors receive funds for distributing non-local EU films. The programme also organises networking events for distributors, and facilitates the creation of groups of distributors, thereby stimulating working together to distribute content across the EU. This support is for both UK-based distributors who distribute non-UK content, and non-UK EU distributors who distribute UK content;
- **support and funding for independent cinemas**—the Europa Cinemas scheme provides funding and facilitates networking between cinemas across the EU, most notably the international Exhibitors' Conference;
- **training, festivals and industry events**—the programme supports UK training courses, networking events, such as MeetMarket and Film London and UK film festivals.

The breakdown of Creative Europe MEDIA funding to the UK is shown in Figure 3.3.

[119] Screen Daily (2015), 'EU cuts MEDIA Programme Budget for 2016'.

Figure 3.3 Creative Europe MEDIA funding to the UK, 2014–15 (€m)



Source: Creative Europe Desk UK (2016), '2014-15 Support for the UK's Audiovisual Sector'.

Potential future changes

Applicants for funds from the Creative Europe MEDIA programme must be legal entities established in:

- EU member states; or
- EEA and EFTA states; or
- acceding, candidate and potential candidate states, in accordance with the agreements in place with such countries; or
- Switzerland, upon completion of a bilateral treaty between that country and the EU;[120] or
- countries covered by the European Neighbourhood Policy, in accordance with the agreement in place with such countries.[121]

If the UK were to leave the EU without retaining its EEA membership, or negotiate a bilateral treaty with the EU after joining EFTA, it would not automatically be a member of Creative Europe.[122]

The loss of Creative Europe funding would be likely to result in a reduction in the output and employment of the industries that receive the funding today. Creative Europe funding often enables producers to acquire other sources of financing.[123] Furthermore, the loss of networking opportunities for producers, distributors and

[120] European Commission (2015), 'Creative Europe Guidelines'.
[121] European Commission (2013), Regulation 1295/2013, Article 8.
[122] Switzerland is currently negotiating such a treaty, which was put on hold as a result of a 2014 Swiss referendum on migration. See Mission of Switzerland to the European Union website, https://www.eda.admin.ch/missions/mission-eu-brussels/en/home/key-issues/media.html.
[123] A survey conducted by Creative Europe Desk found that 41% of respondents received additional UK financing due to receiving Creative Europe funding, and 33% of respondents received additional EU funding due to having this status. See Creative Europe Desk (2016), 'Mid-term Survey'. This has been confirmed by our interviews during the course of this project.

cinema owners will reduce the amount of EU-produced content shown in the UK and the ability of UK producers to sell their content into the EU.

13 European Regional Development Fund and European Social Fund

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production	-3%	-800	Loss of funding for most undeveloped regions and nations of the UK
	Production	-2%	-100	
	Not applicable	0%	0	
	Not applicable	**Total**	**-900**	
	Not applicable			

The European Regional Development Fund (ERDF) is responsible for overall management of the EU funding dedicated to regional development. The main objective of the ERDF is to support the projects and activities that reduce the economic disparity within the member states of the EU. The funding is provided to member states, which then distribute it to local governments in accordance with EU rules.[124]

The AV industry in the UK—in particular film and TV—has received substantial funding from the ERDF in the past. For example, Screen Yorkshire, an organisation that provides production and development funding for TV and film produced in Yorkshire, received £7.5m from the fund in 2014.[125]

Box 3.3 Examples of ERDF-funded projects in England

Advantage West Midlands Production Fund is a £5,625,000 fund used to support the production of feature films and high-end TV.

Greater Manchester ProConnect and Hertfordshire ProConnect are two programmes to provide long-term support to SMEs working in, or in the supply chain to, the film and TV production industry, and received approximately £352,000 and £500,000, respectively. These programmes will deliver advice, support and guidance, both one-to-one and through workshops, to help the companies plan better growth and new business strategies.

Gameslab Leeds is a programme aimed at supporting the development, management and commercialisation of innovation video games in Leeds. The fund received just over £500,000 from the ERDF.

Source: Materials received from Creative England.

Potential future changes

The ERDF is available to EU member states only, and the UK would no longer be eligible for these funds once it leaves the EU (under any exit scenario considered).

The loss of ERDF funding in the UK reduces funding to the screen sector. Although the funding available in the AV sector is relatively limited, it continues to support important projects and institutions such as Screen Yorkshire and Creative England. The most likely impacts are on production of highly cultural/specialised films and local TV programmes.

[124] Department for Communities and Local Government (2015), 'Launch of the England European Regional Development Fund Operational Programme for 2014 to 2020'.
[125] Screen Yorkshire website, see: http://www.screenyorkshire.co.uk/screen-yorkshire-secures-additional-7-5-million/.

14 Horizon 2020 funding

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production	-1%	-300	No impacts in the short to medium term
	Production	-1%	-100	
	Development	-1%	-100	
	All areas	**Total**	**-500**	
	All areas			

Through its Horizon 2020 programme, the EU funds university research, private R&D and other innovative research initiatives across all sectors of the economy. This programme has a total funding pot of €80bn, which it will distribute across the EU and associated countries between 2014 and 2020.[126] Of this funding, €6.9bn is spent on research and innovation in the UK. This funding is estimated to be at least 3% of the UK's spending on research and innovation.[127]

Potential future changes

Thirteen counties (including Norway and Switzerland) have 'Associated Country' status and contribute to Framework Programme budgets, which enables their researchers and organisations to apply for Horizon 2020 funding with the same status as those from EU member states. Associated Country status is open to countries that are members of the EFTA and the EEA.

Without access to Horizon 2020 funding, the amount of spending on R&D and university research is likely to decline in the UK. Based on our interviews, this would be likely to have an impact on:

- the quality of training of new UK-based workers in highly skilled industries such as the VFX, production and video games development—less educational funding would adversely affect the domestic skills pool;
- the development of new techniques in the VFX and video games industries—reduced funding for the development of innovative techniques in these industries is likely to reduce the competitiveness of the UK compared with other countries, which could lead film and TV producers and games publishers to undertake VFX work and development elsewhere.

While the short-term impact of withdrawing funding may be limited, the major impacts would be felt by the industry in the medium to long term. Skilled labour shortages—in particular when coupled with restrictions on free movement of labour—would act as an inhibitor to growth and naturally force industry participants to locate some activities abroad. From our interviews we understand that this trend has already become apparent in the VFX/post-production industry over the past few years.

[126] See https://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020.
[127] The Royal Society (2015), 'UK research and the European Union: The role of the EU in funding UK research'.

15 EU student and university funding

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production, distribution	-1%	-300	Significant loss of diversity of young workforce
	Production, distribution	-1%	-100	Limits in access to other cultures
	Development	-1%	-100	
	All areas	Total	-500	
	All areas			

The presence of EU students in the UK contributes to university budgets through tuition fees. In 2015, non-UK EU students accounted for approximately 5% of total student numbers and provided universities with around £670m of revenue.[128]

There are a number of policies that govern the rights of non-EU foreign students holding Tier 4 visas. For example, Tier 4 visa rules do not allow students to undertake 'low-skilled' work, and they must return to their country of residence to apply for permanent or temporary work visas.[129] EU students are not covered by these rules.

Potential future changes

If, upon leaving the EU, the UK remained a member of the EEA, the government would be unable to regulate the work status of EU students or include them in any cap on migration or foreign student numbers. Both aspects could be changed if the UK left the EEA.

Any exit scenario other than EEA membership is likely to lead to reduced numbers of students of EU origin. This would translate into reduced funding to universities. Any changes in eligibility for post-study work for EU citizens would restrict the labour supply for the screen sector. These effects combined would result in a fall in the number, as well as quality, of UK-based workers available to work across the screen sector. VFX and video games development would be particularly affected by these funding reductions, given the highly specialised nature of the work in these parts of the value chain.

3.3.4 The Audiovisual Media Services Directive (film and TV)

The AVMSD governs EU-wide coordination of national legislation on all AV media, spanning traditional TV broadcasts and on-demand/non-linear services.[130] The Directive sets content rules, and quotas for independent and European works, and allows for the transmission of broadcasts from one member state across the EEA through the COOP.

[128] HESA (2016), 'Income and expenditure of higher education providers 2014/5'.
[129] See https://www.gov.uk/government/news/tier-4-visas-immigration-rules-changes.
[130] See https://ec.europa.eu/digital-single-market/eaudiovisualNot applicable audiovisual-media-services-directive-avmsd.

16 'European works' quotas

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Production, distribution	0%	0	No impacts
	Production, distribution	0%	0	
	Development	0%	0	
	All areas	**Total**	**0**	
	All areas			

The AVMSD requires each broadcaster within its jurisdiction to reserve (where practicable) a majority of its transmission time for 'European works'.[131] At present, by virtue of the UK being an EU member state, the UK works are automatically regarded as European. The effect of this policy is to boost demand for EU works across all EU countries, making them more attractive/valuable for commissioning channels, broadcasters and distributors.[132]

European works quotas currently apply only to traditional channels and platforms, but the Commission has proposed imposing a 20% quota on online platforms.[133] There is no systematic data on the proportion of European works on channels in each EU country. However, a recent study found that only 31% of all fictional programming on channels based in an average EU country is European.[134] Indeed, less than 50% of fictional output on channels located in four of the six largest EU AV markets would qualify towards meeting the European works quota.[135]

Potential future changes

The AVMSD covers members of the EU or the EEA only. However, even under the EFTA or WTO exit scenarios, the UK would still be a signatory of the European Convention on Transfrontier Television (ECTT). We understand that the definition of a 'European work' derives from this Convention, and that the definition of a 'European work' in the AVMSD does not require a connection to being an EU member state, provided that there is a connection to a party signed up to the Convention.[136]

Therefore, under EFTA or WTO exit scenarios, UK works would be likely to continue to qualify as 'European works' for the purposes of EU content quotas, subject to the important caveat that the UK itself would not adopt a discriminatory treatment of content from EU member states (and as such would not be in breach of the ECTT arrangements).

This suggests that the most likely outcome is that leaving the EU would not lead to changes in the European works quota, unless the UK also leaves the ECTT, or AVMSD is amended to delink the definition of a 'European work' from that set out in the ECTT. If that were the case, UK AV content would not be counted towards the European work quota obligations of European broadcasters, and

[131] This requirement excludes the time appointed to news, sports events, games, advertising, teletext services and teleshopping.
[132] Different EU member states enforce the European works quota to different degrees, which is possible due to the 'where practicable' language used in the AVMSD.
[133] European Commission (2016), 'Commission updates EU audiovisual rules and presents targeted approach to online platforms'.
[134] European Audiovisual Observatory (2015), 'European Fiction Works on European Television'.
[135] These markets are Germany, the UK, Italy and Spain. Fiction output in France and Poland is just over 50%.
[136] Based on legal analysis provided by Wiggin LLP.

hence the demand for UK content would be reduced since other qualifying content would be required to replace it.

17 The Country of Origin Principle in the AVMSD

Sector	Direct impact on…	Impacts		
		Output[1]	Employment	Cultural
	Distributors/channels	0%	-800	If non-domestic channels forced to move, loss of cultural diversity in programme commissioning and channel creation
	Distributors/channels	0%	-800	
	Not applicable	0%	0	
	Not applicable	**Total**	**-1,600**	
	Not applicable			

Note: [1] In the long run, as channel operators would have to move editorial decision-making elsewhere if the COOP no longer applies to the UK, they may also choose to move production activity elsewhere. For the purposes of our modelling, we have made the conservative assumption that this would not happen.

In relation to the AVMSD, the COOP refers to the principle that AV media service providers are subject to the regulations in their country of origin only, and cannot be subject to regulation in the destination country.[137]

This allows for broadcasters (and providers of VoD services) to be based in one EU country and broadcast to another. Due to the favourable regulatory framework in the UK, a number of broadcasters that wish to broadcast their content throughout the EU (or indeed just in an individual non-UK EU member state) choose to be based in the UK. As of 2013 there were some 650 such TV channels.[138] In 2012, these channels accounted for 12,300 jobs in the UK and around £400m per annum in expenditure into the UK economy.[139] [140] A significant number of these jobs were related at least in part to non-domestic channels.[141]

The AVMSD states that a broadcaster must be under the jurisdiction of a country covered by the Directive in order for the COOP to apply. To be in the jurisdiction of a member state, the broadcaster must be 'established' there. According to the Directive, a broadcaster is established in a member state if either:

- it has a head office in the member state in question and the editorial decision-making takes place in that member state; or
- a significant part of its workforce and either its head office or editorial decision-making are located within the member state in question, and a significant part of the workforce is not located in another member state. If a significant part of the workforce is based in both those member states, the broadcaster is deemed to be established in the member state where it has its head office. If a significant part of the workforce is not based in either member state, the service is deemed to be established in the member state where it

[137] There are some content rules laid out in Article 3 of the AVMSD, such as restrictions on incitement to hatred.
[138] See HM Treasury (2016), 'HM Treasury analysis: the long-term economic impact of EU membership and the alternatives', p. 56.
[139] COBA (2016), 'Building a Global TV Hub: Multichannel broadcasters and the UK's global competitiveness'.
[140] Specifically, 127 channels belonging to organisations affiliated to the COBA. Estimates are for 2010. Oliver & Ohlbaum Associates Ltd (2012), 'COBA 2012 Economic Impact Report', Figures 10, 14 and 15.
[141] COBA analysis provided to Oxera.

first began its activity, provided that it maintains a stable and effective link with that member state.[142]

It is unclear at present how the Commission, courts or regulators would interpret the 'significant part of its workforce' requirement, or what activity exactly would count as 'editorial decision-making'. There have been very few legal cases, either domestic or at an EU-level, that have addressed this question.[143]

The ECTT also allows broadcasters to broadcast to countries that are signatories of the Convention. However, the Convention does not cover online transmissions, and several EU countries are not signatories of, or have not ratified, the ECTT.[144] At present, there is no indication of any intention by the UK government to leave the ECTT.

Potential future changes

The AVMSD is binding on members of the EU and EEA, and would apply to the UK if it were to join EFTA.[145] In the event of a WTO-style exit, the UK could continue to apply the COOP to content suppliers broadcasting content into the UK from EU countries. This would not, however, guarantee reciprocal arrangements for UK broadcasters and/or channels broadcasting content into the EU.

As such, if the UK remained in the EEA after its exit from the EU, or if it chose to adopt the AVMSD and the EU/EEA member states agreed on reciprocal arrangements, there would be no changes to the status quo. Otherwise, channels and broadcasters would be likely to have to move staff, editorial decision-making and/or their head offices to an EU member state in order to maintain the ability to broadcast under the COOP. This would have a particular impact on the approximately 650 non-domestic channels established in the UK. Some channels might continue to operate under the ECTT, albeit with limited reach.

[142] Based on legal advice from Wiggin LLP.
[143] Based on legal advice from Wiggin LLP. In addressing 'editorial decision-making' in a case involving Vice UK Ltd, Ofcom noted: 'editorial responsibility is a matter of fact and is determined by: where the majority of content originates from; who selects and arranges the content to be included on the service; and who is responsible for signing-off on content. See Ofcom (2015), 'Appeal by Vice UK Limited Against a Notice of Determination that the Provider of the Service "Vice Video" Has Contravened Sections 368A and 368D(3)(ZA) of the Communications Act 2003'.
[144] These countries are Sweden, Luxembourg, Denmark, Ireland, Belgium and the Netherlands. See: https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/132/signatures?p_auth=3evjACCk.
[145] See European Council (2010), on the position to be taken by the EU in the EU–Switzerland Joint Committee established in the Agreement between the European Community and the Swiss Confederation in the AV field, establishing the terms and conditions for the participation of the Swiss Confederation in the Community programme MEDIA 2007, as regards a Joint Committee decision updating Article 1 of Annex I to the Agreement.

18 Independent work quota

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Channels and broadcasters	0%	0	No impacts
	Channels and broadcasters	0%	0	
	Not applicable	0%	0	
	Not applicable	Total	0	
	Not applicable			

The AVMSD sets quotas on independently produced content that needs to be included as part of a given channel's/broadcaster's schedule. Under the Directive, broadcasters must reserve at least 10% of their transmission time or 10% of their programming budget for European works from independent producers.

Individual national regulators are free to set quotas at different levels. Ofcom, the UK communications regulator, currently sets an independent work quota at 25%, which is significantly higher than the 10% in the AVMSD.[146]

Potential future changes

The AVMSD is binding on members of the EU or the EEA only. However, unless the UK's exit from the EU is also accompanied by a change in Ofcom's quota requirement, there will be no change as a result of exit.

3.3.5 Video games-specific policies

There are two video games-specific policy areas that would be affected by the UK leaving the EU. The first involves changes to the data protection regime within the EU through the General Data Protection Regulation. The second is the potential introduction of establishment criteria for UK-based games publishers and distribution platforms to sell content across the EU. We explore each in turn below.

19 Avoiding the General Data Protection Regulation

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Not applicable	0%	0	No impacts
	Not applicable	0%	0	
	Distribution	+1%	+100	
	Not applicable	Total	+100	
	Not applicable			

In 2016, the European Commission and the European Parliament ratified the General Data Protection Regulation (GDPR), which updates EU rules surrounding the use and transportation of personal data.[147] Some of the key changes this brings into effect are:

[146] Ofcom (2015), 'Review of the operation of the TV production sector'.
[147] European Commission (2016), 'Reform of EU data protection rules'.

- **expansion of territorial reach**—the GDPR stipulates that data controllers and processors outside the EU whose processing activities relate to the offering of goods or services within the EU must adhere to EU rules on data protection;
- **accountability**—the GDPR places accountability obligations on data controllers to demonstrate compliance with the Regulation;
- **consent and rights of data subjects**—data controllers must be able to show that subjects (or users) have given consent for their data to be held, and it should be easy for them to withdraw their consent (the 'right to be forgotten').

The costs of implementing these changes are likely to be substantial for the UK games industry. One estimate puts the costs of implementing the consent and rights of data subjects to UK firms at £12m–£37m a year.[148] Games publishers and distribution platforms (e.g. Steam, or the Sony Entertainment Network) hold data on subjects, and will therefore incur some of these costs.

The GDPR also has a provision which states that data can be shared with operators outside the EEA only if those operators are based in countries which ensure adequate data protection.

Potential future changes

If the UK remained in the EEA, UK data controllers would continue to have to comply with the GDPR for UK subjects, but they would not need to do so in the other exit scenarios. The data of EU citizens, held by controllers in the UK, would continue to be subject to these rules, irrespective of the exit scenario.

While leaving the EU presents an opportunity for companies that deal mainly with UK users, and hence would not need to implement costly changes, all companies with user bases from across the EU would nonetheless be affected, and hence for them the UK's departure from the EU does not make a difference.

The costs of implementing the GDPR will be reduced if game publishers and distribution platforms do not have to implement the changes to data protection regulation for UK consumers, particularly if the majority or all of their customers are UK-based. However, this will mitigate only some of the costs associated with the GDPR—as noted above, controllers will still have to implement these changes if they handle the data of EU consumers.

[148] London Economics (2013), 'Implications of the European Commission's proposal for a general data protection regulation for business'.

20 Establishment criteria for games distribution platforms and publishers

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Not applicable	0%	0	No impacts
	Not applicable	0%	0	
	Distribution	0%	0	
	Not applicable	**Total**	**0**	
	Not applicable			

With EU membership, UK-based distribution platforms and developers can store consumer data and distribute video games and digital applications across the EU. This is the video games equivalent of the COOP (see policy 17).

Potential future changes

The Commission could impose 'establishment' criteria, which require developers and/or distribution platforms to base at least some of their operations within the EU. For example, distribution platforms may be required to base staff or data servers within the EU. While there are no concrete proposals on this at present, we understand that several other countries, e.g. China, have already taken steps in this direction.[149] This would have the effect of shifting a potentially significant portion of video game publishing and distribution jobs away from the UK.

3.3.6 Other policies

21 Divergence in regulatory regimes

Sector	Direct impact on…	Impacts		
		Output	Employment	Cultural
	Distribution	0%	0	(Impact via other policies and legislation)
	Distribution	0%	0	
	Distribution	0%	0	
	Not applicable	**Total**	**0**	
	Not applicable			

Currently EU legislation ensures that the UK maintains broadly the same regulatory regime within the screen sector as the rest of the EU. For example, minimum standards for content, labour and equipment flows, state aid, import and export rules are all determined by EU legislation.

Potential future changes

As highlighted in the discussion of the policies and legislation above, the ability of UK regulators and government to shape regulation within the screen sector would be limited were the UK to remain in the EEA. If the UK were to join EFTA or trade under WTO rules, there is more scope for policy changes. If the UK regulatory regime were to significantly diverge from the EU norms, exporting content and services to the EU would become more difficult. This divergence would affect a number of policy areas, as follows.

[149] Based on our interviews with Ukie and video games companies.

- **Content rules for channels and broadcasters and providers of VoD services**—the AVMSD provides regulations on the content of TV channels and TV-like VoD services within the EU. A change in the regulatory regime in the UK might result in such channels and VoD services being unable to comply with both EU and UK content rules simultaneously. Channels and VoD services provided from the UK may be unable to 'clear' content rules stipulated in the AVMSD, which would mean that they could not legally be transmitted in the EU.
- **Copyright rules**—the EU has harmonised protection of rights holders across EEA countries through a European regulatory framework for copyright. A divergence between this regulatory framework and the UK may make it more difficult for UK sales agents and distributors to sell UK content to EU exhibitors.
- **Data storage**—the GDPR has a provision stating that data can be shared with operators outside the EEA only if those operators are based in countries that ensure adequate data protection. Were the UK to significantly change its requirements on data protection, UK-based distributors might find it difficult to comply with both the UK and EEA rules.
- **Digital contract rules**—the Commission has recently proposed a standardised set of rules in the Digital Content Directive for the protection of consumers who purchase digital content.[150] If the UK were to have different regulations on this issue, digital distribution platforms would find it difficult to operate in the UK and the EU at the same time.

Divergence of regulatory regimes would not in itself have a major impact, but since the regulatory regimes in the EU and the UK underpin other policies and legislation explained in this section, a common regulatory regime would be critical to any exit scenario that relies on continued close ties with Europe across the screen sector.

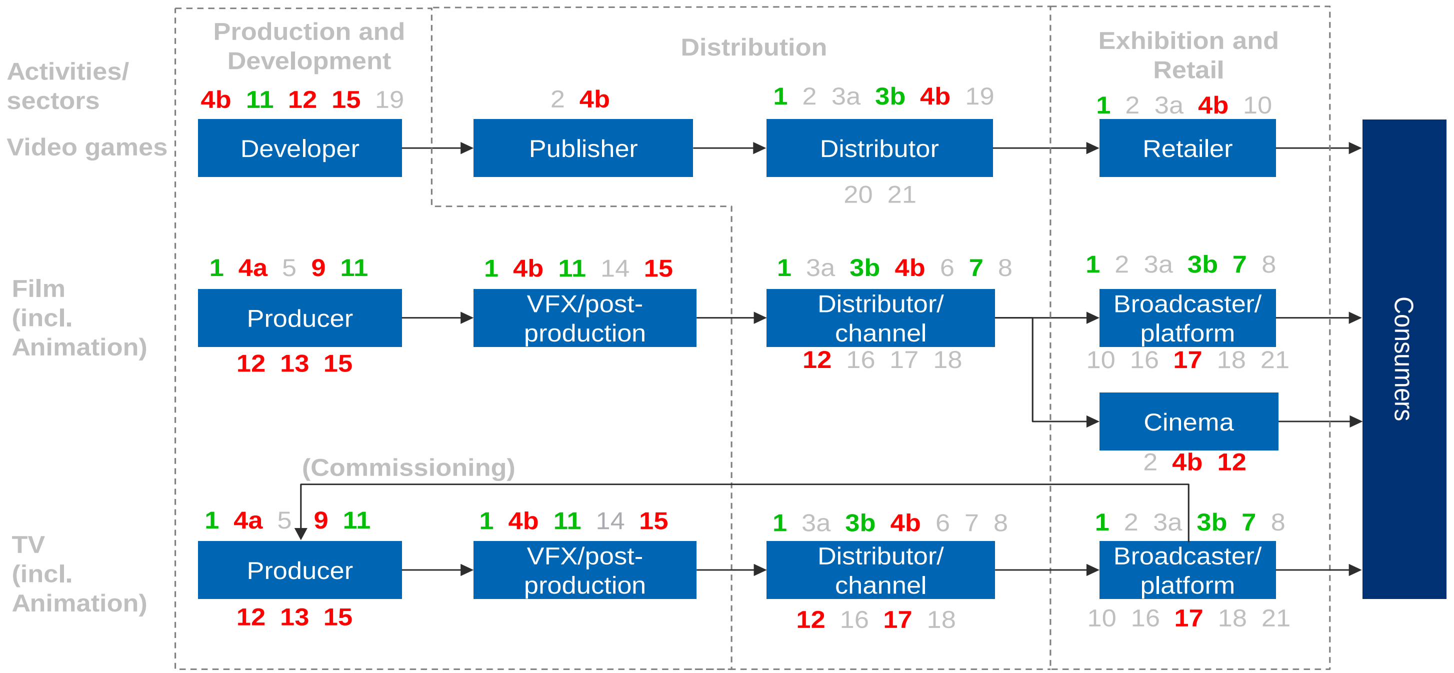
3.4 Priority legislation and policies

Our analysis of the individual policies and legislation reveals that the UK's exit from the EU offers several opportunities for growth of the screen sector, as well as a number of substantial risks. There are also policies that would be likely to continue to apply irrespective of the specific exit scenario.

Figure 3.4 below highlights the main risks and opportunities.

[150] European Commission (2016), 'A proposal for a Directive on certain aspects concerning contracts for the supply of digital content'.

Figure 3.4 Overview of the main risks and opportunities



Macroeconomic issues	Freedom of movement	Cross-border policies	Funding	AVMSD (TV and film)	Video games specific areas	Other
1 Exchange rate	4a Short-term movement of people	7 Reforms to copyright regulation in the EEA	11 Tax reliefs	16 'European work' quotas	19 Data protection regulation	21 Divergence in regulatory regimes
2 Change in UK demand	4b Long-term movement of people	8 Portability	12 Creative Europe	17 Content-based COOP in AVMS	20 Establishment criteria	
3a Change in EU demand	5 Freedom of movement of equipment	9 Changes to co-production relationship	13 ERDF	18 Quotas on independent works		
3b Change in non-EU demand	6 Tariffs	10 Geo-blocking	14 Horizon 2020			
			15 University funding			

Source: Oxera analysis.

These opportunities and risks are set out in turn below.[151]

3.4.1 Main opportunities

There are five main areas of opportunity for the UK's screen sector arising from the UK's exit from the EU. In order of impact, these are:

- **depreciated pound sterling** (policy 1 above), allowing UK exports to be more competitive internationally, and attracting incremental inward investment into the UK's screen sector;
- **increased international demand from outside the EU** (3b)—rooted in the UK's ability to sign FTAs with non-EU countries, stimulating further demand for UK exports abroad;
- **tax relief** (11)—the existing UK tax relief regime could, under certain circumstances, be made even more effective so as to attract more output creation in the UK, across all aspects of the screen sector;
- **avoiding EEA cross-border copyright reforms** (7) would retain the territoriality of distribution of films and TV programmes within the UK, thus offsetting losses of value of rights under the proposed copyright changes;
- **avoiding changes in video games regulation on data protection** (19) could save additional costs to the UK companies targeting mostly UK consumers, and prevent some outflow of activity to the EU.

Other opportunities identified include avoiding changes to geo-blocking regulations (10), meaning that UK retailers of physical goods would not lose sales to goods sold on online platforms based in the EU; and avoiding changes to portability regulations (8), which would mean platforms in the UK would avoid the costs of implementing these reforms.

Table 3.2 summarises the main results from our modelling.[152]

Table 3.2 Main opportunities for the UK's screen sector stemming from the UK's exit from the EU

Policy/issue	Impacts			
	Output (%)[1]	Employment[2]	Cultural[3]	Overall
1 Depreciated sterling	7–9	6,500	Limited	**High**
3b Increased non-EU demand	3–4	3,600	Limited	**Medium**
11 Increased tax relief	2–3	1,600	Positive	**Medium**
7 Avoiding cross-border copyright reforms	0–2	900	Limited	**Medium**
19 Avoiding data protection	0–1	100	None	**Low**
10 Avoiding geo-blocking	0–1	100	Limited	**Low**
8 Avoiding portability	–	200	Limited	**Low**

Note: [1] 'Output' refers to a proportional change in the volume of screen sector content made in the UK annually. [2] 'Employment' refers to the number of jobs gained. [3] 'Cultural' impacts are summarised in terms of the magnitude of the overall impact.

Source: Oxera analysis.

[151] Each policy and legislation in the sub-sections below is labelled with a number corresponding to the number used to represent that policy or legislation in Figure 3.1.
[152] As a reminder, many of the assumptions represent very high-level estimates and should therefore be treated with caution. We have laid these out in detail in Appendix A3 and recommend more complete investigation during Phase 2 of this research.

3.4.2 Main risks or downsides

Leaving the EU risks unwinding many of the key mechanisms currently underpinning the UK's screen sector, in particular:

- **loss of freedom of movement of people on a long-term basis** (4b) risks not only eroding the available pool of staff and talent across the industry, but would also adversely impact the highly skilled activities in VFX, post-production, animation and video games;
- **loss of ability to broadcast channels and deliver VoD services under the COOP** (17) would be particularly impactful for non-domestic channels established in the UK but serving viewers across Europe, potentially leading to relocation of staff out of the UK;
- **loss of Creative Europe funding** (12) would deprive mainly smaller, independent film and TV programme producers and distributors from both funding for their content, as well as support in participating in industry-wide forums and conventions. The outcome would be loss of jobs and highly cultural content;
- **loss of freedom of movement of people on a temporary basis** (4a), leading to increased difficulty for EU producers to undertake principal photography in the UK, and vice versa, as well as taking away at least some of the flexibility of filling in temporary employment gaps with EU citizens;
- **removing co-production financing and support activities** (9) would deprive the UK industry of an important source of funding and support, and the natural connection to producers in the EU;[153]
- **loss of support and training funds** (13–15), which in the medium to long run would contribute towards the erosion of UK skills and lower competitiveness of the UK-based firms, particularly in the VFX, post-production and animation sectors.

There would also be some, although probably fairly limited, impact caused by a reduction in domestic UK demand (2), as well as in EU demand for UK content (3a). Losing freedom of movement of equipment (5) would increase costs and difficulty of UK producers undertaking principal photography in the EU.

These individual issues, policies and legislation are summarised in Table 3.3.

[153] As explained in section 3.2, official co-production status unlocks both co-production financing (from, for example, Creative Europe), and a route to additional tax reliefs in non-UK EU Member States, additional financing and distribution support.

Table 3.3 Areas of main risk or downside for the UK's screen sector stemming from the UK's exit from the EU

Policy/issue	Impacts			
	Output (%)[1]	Employment[2]	Cultural[3]	Overall
4b Loss of FoM of people (long term)	-6 to 5	-5,000	High negative	**High**
12 Loss of Creative Europe funds	-7 to 0	-2,300	High negative	**High**
4a Loss of FoM of people (short term)	-2	-1,700	High negative	**High**
17 Being outside content-based COOP	—	-1,600	High negative	**Medium**
9 Removing co-production financing and support	-3 to 0	-1,000	High negative	**Medium**
13 Loss of regional development funds	-3 to 0	-900	High negative (long term)	**Medium**
3a Loss of EU demand	1 to 0	-500	Limited	**Low**
14 Loss of Horizon 2020 funds	-1	-400	Negative (long term)	**Low**
15 Loss of university and training funds	-1	-400	Negative (long term)	**Low**
5 Loss of FoM of equipment	-1 to 0	-300	Limited	**Low**
2 Reduction in UK demand	–	-300	Slightly negative	**Low**

Note: FoM, freedom of movement. [1] 'Output' refers to a proportional change in the volume of screen sector content made in the UK annually. [2] 'Employment' refers to the number of jobs lost. [3] 'Cultural' impacts are summarised in terms of the magnitude of the overall impact.

Source: Oxera analysis.

3.4.3 Policies with lesser effects

We have also identified a number of policy areas that are unlikely to have a significant impact in any exit scenario:

- **imposition of tariffs** (6) on UK exports into the EU—at present there are no tariffs on any goods or services in the screen sector between the EU and any other country, suggesting that this will be unlikely;[154]
- **quotas on 'European works'** (16) are likely to be unaffected, since they are not governed by the UK being a member of the EU, but instead by the ECTT, of which the UK would remain a signatory under any exit scenario;
- **quotas on independent works** (18), which for UK broadcasters and channels are set by Ofcom and are more stringent than the EU requirement;
- **establishment criteria** (20) are not currently imposed on the video games industry by the EU;
- **divergence of regulatory regimes** (21), which could lead to some of the other policies and legislation being affected, but does not have an impact in its own right.

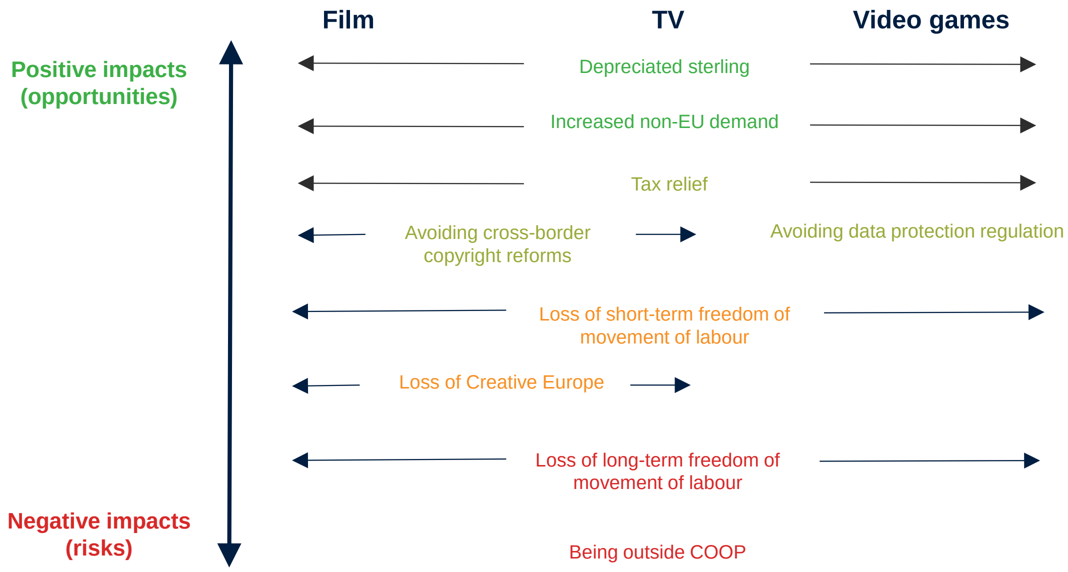
3.4.4 Sectoral impacts

As highlighted in Figure 3.4, the identified policies and legislation affect different parts of the UK's screen sector value chain. While some policies, macroeconomic factors and legislation affect all industries (e.g. depreciated pound sterling), others affect only one or two of the five industries discussed in this report. For example, the changes related to the AVMSD affect film and TV only, while potential changes to establishment criteria are most likely to affect

[154] Tariffs on video games are also explicitly disallowed under WTO rules.

video games. Figure 3.5 identifies the main risks and opportunities for film, TV and video games (post-production including VFX, and animation, share the same conclusions as the film and TV sectors that they feed into).

Figure 3.5 Impacts of legislation and policies across the individual parts of the screen sector



Note: As noted above, VFX is treated as an input into film and TV content. Fully animated TV shows within the children's genre are counted as stand-alone outputs; similarly, feature-length animated films are counted as stand-alone films. All other animation activity is treated as an input into film and TV production.

Source: Oxera analysis.

4 Potential impacts of different exit scenarios

While it is important to consider specific legislation and individual policies affecting the screen sector, actual exit from the EU will entail abandoning or changing some of this legislation and these policies simultaneously. For instance, while changes to forex may be favourable in bringing more demand for UK content and services, such demand could be satisfied only if there is sufficient supply of labour in the economy, which may not be taken for granted if freedom of movement of workers is restricted.

By considering demand and supply changes together, several, purposefully wide-ranging, hypotheses on the potential exit scenarios are set out in this section, in order to lay out the potential scale of the impacts of simultaneous changes to multiple policies.

4.1 Definition of individual exit scenarios

The specific way in which the UK will leave the EU is currently uncertain, and subject to an extensive political debate (see section 1.2 for more discussion). Our analysis in section 3 has set out individual risks and opportunities associated with the UK leaving the EU, which can be used to assess the costs and benefits of different forms of exit.

In our analysis we have identified two primary exit scenarios that the UK could follow without negotiating with the EU and/or other countries, and without fundamentally changing any of the remaining policies.

- **EEA**—n this scenario, the UK would leave the EU but retain its membership of the EEA. This involves the UK adopting extensive secondary legislation (EEA-relevant regulations, Directives, decisions and certain non-binding commitments), whereby the post-exit outcome is broadly similar to remaining in the EU, with the important exception of the UK no longer being able to influence EU policy.
- **'Pure' WTO**—the UK would leave the EU and the EEA, and revert to WTO terms with the EU, repealing all EU-led screen sector legislation. In this scenario, there would be no changes to the UK's screen sector policies—for example, there would be no changes to the tax relief or funding regimes.

However, these two scenarios are not the only options available to the UK government. Negotiations between the UK and the EU may result in various exit outcomes. These intermediate scenarios are as follows.

- **EFTA-type arrangement**: the UK would leave the EU and be able to negotiate a series of bilateral agreements similar to the current arrangement of Switzerland. Some of these agreements are mandatory—e.g. on the freedom of movement of labour, goods and services.[155] Many others would be a product of bilateral negotiations, and it is by no means guaranteed that the UK would be treated in the same way as the current EFTA members. In this report we have assumed that the UK would be able to reach a deal similar to that of Switzerland. Importantly, membership of EFTA would enable a series of other bilateral agreements with non-EU countries.[156]

[155] EFTA membership offers preferential trading deals to other EFTA members (Liechtenstein, Norway and Iceland), but nonetheless requires a separate FTA with the EU. See http://ec.europa.eu/trade/policy/countries-and-regions/countries/switzerland/index_en.htm.
[156] As noted above, FTAs often include cultural exemptions. We have assumed throughout that the UK would be able to negotiate screen sector-specific FTAs.

- **WTO with screen sector FTA**: the UK would leave the EU and the EEA, would not join EFTA, and would revert to WTO terms with the EU. The key assumption is, however, that freedom of movement, either long- or short-term, would not be included within this FTA. In addition, the UK government would negotiate an FTA with the EU, which would allow it to adopt the most beneficial screen sector-relevant legislation. Such a deal would rely on reciprocity of arrangements: EU member states and institutions would treat the UK as complying with and being subject to all relevant Directives and regulations.
- **WTO with changes to domestic policy**: similar to the 'pure' WTO scenario described above, with the key difference that the UK government would also open up the UK's ability to alter many of the current policies, e.g. on tax reliefs. This is based on the premise that no reciprocal agreements are in place between the UK and the EU. In this scenario, the UK government would also be able to negotiate FTAs with non-EU countries.[157]

There are possible FTAs that the UK could negotiate with the EU, and the specific FTA arrangement considered above is just one of many possible options. Other FTAs could have elements of more than one of these scenarios.

Changes in individual policies by the UK government or Ofcom might affect the likelihood of agreements in other policy areas. For example, if the UK were to leave the EEA and there were divergence in content regulations on broadcasting, it is unlikely that UK-based channels could clear content regulations through the COOP within the AVMSD. The UK government should consider such potential conflicts in policy when negotiating with the EU on issues concerning the screen sector.[158]

As noted in section 3, some policies and legislation are affected only in specific exit scenarios.

Table 4.1 outlines which policy levers and legislation would change in each of the individual exit scenarios.

[157] Such countries could include China or the USA, but will be dependent also on the attitudes that such potential partners take towards international cooperation.
[158] For instance, aggressive changes to UK tax reliefs might result in changes to EU policy in order to protect the competitiveness of works produced in the EU. The European Commission and the European Parliament could choose to change legislation such that UK-produced works are not counted as 'European' for the purposes of the quota regime.

Table 4.1 Policy levers and legislation that are affected by different exit scenarios

Policies	EEA	EFTA	FTA within the screen sector	WTO with changes to domestic policy	‘Pure’ WTO
Macroeconomic					
1 Depreciated sterling	🟢	🟢	🟢🟢	🟢🟢	🟢🟢
2 Lower UK demand	🔴	🔴	🔴🔴	🔴🔴	🔴
3a Lower EU demand	🔴	🔴	🔴🔴	🔴🔴	🔴🔴
3b Increased ROW demand		🟢🟢	🟢🟢	🟢🟢	
Movement					
4a Loss of FoM of people (short term)			🔴	🔴🔴	🔴🔴
4b Loss of FoM of people (long term)			🔴	🔴🔴	🔴🔴
5 Loss of FoM of equipment				🔴	🔴
6 Tariffs				🔴	🔴
Cross-border policies					
7 Avoiding cross-border copyright reforms		🟢	🟢	🟢	🟢
8 Avoiding portability regulation		🟢	🟢	🟢	🟢
9 Loss of co-production financing/support					
10 Avoiding geo-blocking reform		🟢	🟢	🟢	🟢
Funding					
11 Increased tax reliefs				🔴	
12 Loss of Creative Europe funds				🔴	🔴
13 Loss of ERDF funds				🔴	🔴
14 Loss of Horizon 2020 funds				🔴	🔴
15 Loss of university funding		🔴	🔴	🔴	🔴
AVMSD (film and TV)					
16 European quotas					
17 Loss of ability to broadcast under COOP				🔴	🔴
18 Independent works quota					
Video games					
19 Avoiding GDPR		🟢	🟢	🟢	🟢
20 No change to establishment criteria		🔴		🔴	🔴
Other					
21 Divergence in regulation		🔴	🔴	🔴	🔴

Key: 🟢 indicates a positive change and 🟢🟢 indicates a positive change with a magnified impact.
🔴 indicates a negative change and 🔴🔴 indicates a negative change with a magnified impact.
Source: Oxera analysis.

4.2 Indicative impacts of different exit scenarios

Qualitatively, it would appear that some of the scenarios—in particular, EEA and EFTA—may offer the screen sector incremental opportunities over today’s status quo. Conversely, the other exit scenarios are likely to result in significant adverse impacts owing to restrictions of movement of people or removal of some categories of funding.

This logic is confirmed by our economic model, which provides indicative impact values for employment across the UK’s screen sector, and output of films, high-end TV programmes and video games in each of the exit scenarios. This is a combination of impacts of individual macroeconomic factors, as well as policies and legislation (as presented in section 3).[159] Our overall results for each of the exit scenarios are shown in Table 4.2. In terms of impacts, the EFTA scenario is positive and represents an upside compared with today's status quo; the EEA scenario is broadly replicating today's industry outcome and all other scenarios result in negative impacts on output, employment and cultural diversity.

Table 4.2 Modelled impacts of different exit scenarios

Scenario	Impacts			
	Output (%)[1]	Employment[2]	Cultural[3]	Overall
EFTA-type arrangement	4–7	5,000	Small positive	**Positive**
EEA	-2 to 3	300	Limited	**On par**
FTA within the screen sector	-10 to -6	-6,500	Moderate negative	**Negative**
WTO with changes to domestic policy	-13 to -7	-11,300	Moderate negative	**Highly negative**
'Pure' WTO	-17 to -11	-14,100	Highly negative	**Highly negative**

Note: [1] 'Output' refers to a proportional change in the volume of screen sector content produced in the UK annually. [2] 'Employment' refers to the number of jobs gained or lost. [3] 'Cultural' impacts are summarised in terms of the magnitude of the overall impact.

Source: Oxera analysis.

The EFTA-type arrangement is the most favourable outcome for the UK's screen sector, and results in moderate increases in content creation and employment. Becoming a member of EFTA would mean that the UK would be likely to have to retain the freedom of movement, but would be able to opt out of potentially damaging EU policy measures such as changes to cross-border copyright regulation. In addition, sterling depreciation will continue to have the effect of increasing exports and production activity in the UK.

However, the EFTA-type arrangement outlined above would require the UK to negotiate to opt into legislative instruments that are beneficial (such as the AVSMD and Creative Europe), and opt out of those that are harmful (such as the cross-border copyright reforms). They would also require the UK government accepting freedom of movement of labour. Given the current nature of the negotiations with the EU, the UK is unlikely to be able to make such a deal.

If the UK were to remain a member of the EEA, sterling depreciation would more than offset the effects of the reduced demand for screen sector content from UK consumers. This results in a very small increase in output and employment, and the overall outcome is similar to the status quo.[160] The major difference is that the UK would lose its ability to influence EU policy.

Both the scenarios where the UK signs a reciprocal FTA with the EU, and where domestic policy is changed to mitigate the effects of leaving the EU on WTO terms, also have net negative economic impacts. In both cases, the potential benefits, such as FTAs with non-EU countries and the potential for changes to the tax relief regime are ultimately outweighed by the loss of freedom of movement and EU funding.

[159] It is worth noting that the combined effect of multiple policies tends to be larger than its individual parts. This is largely due to impacts on funding of screen sector content, where, based on interviews and received data, we assumed that the relationships are not linear. For instance, loss of 10% of funding of specialised films would result in more than double the loss of output than a 5% loss of funding. This is further explained in Appendix A1.
[160] This outcome would be the same if the UK remained in the EU after all, and the sterling depreciation effect persisted in the medium to long run.

If the UK reverted to WTO membership with no screen sector domestic policy changes, the impact on the sector would be highly negative. This is driven largely by the loss of freedom of movement, loss of EU funding and removal of the ability to broadcast content under the COOP.

5 Summary and recommendations for further research

5.1 Key opportunities and risks from exit

Oxera's review of the individual issues, policies and legislation affecting the UK's screen sector has resulted in three broad categories: opportunities, risks, and policies whose impact is likely to be limited following the UK's exit from the EU.

The main opportunities across the screen sector are as follows.

- **Sterling depreciation**, making UK exports (both content and services) more competitive internationally, and attracting incremental inward investment into the UK's screen sector (in particular, in production, post-production/VFX and animation).
- **Opening up new international markets outside the EU to UK content**, if the UK is able to sign FTAs with non-EU countries, stimulating further demand for UK exports abroad, as well as further inward investment.
- **Tax reliefs being more effective** so as to attract more output to be created in the UK, across all parts of the screen sector.

The other opportunities are comparably smaller, and all revolve around flexibility in avoiding the introduction of new EU regulation—e.g. copyright reforms, changes in video games regulation on data protection and establishment, portability of AV content across the EU, or the new geo-blocking regulations.

Individual opportunities are applicable in different specific exit scenarios. For instance, while the UK's screen sector would benefit from a devalued pound irrespective of the exit scenario, its ability to boost non-EU international demand by signing FTAs would be restricted if it remained in the EEA, or by the terms of a potential FTA with the EU. These are summarised in Table 5.1, where ● corresponds to the opportunity being available, and **?** to a potential opportunity depending on the outcome of the negotiations.

Table 5.1 Main opportunities for the UK's screen sector stemming from the UK's exit from the EU

Policy/legislation/issue	Scale of impact	Applicable in			
		EEA	EFTA	FTA	WTO
Depreciated sterling (1)[1]	High	●	●	●	●
Increased non-EU demand (3b)	Medium		●	?	●
Increased tax relief (11)	Medium		●	?	●
Avoiding cross-border copyright reforms (7)	Low		●	?	●
Same establishment criteria (20)	Low		●	?	●
Avoiding introduction of GDPR (19)	Low		●	?	●
Avoiding geo-blocking (10)	Low		●	?	●
Avoiding portability (8)	Low		●	?	●

Note: [1] The numbers in brackets correspond to individual policies and legislation considered in section 3.

Source: Oxera analysis.

The main risks of exit are as follows.

- **Loss of freedom of movement of people** on a long-term basis is likely to erode the available pool of staff and talent in the UK across the industry (due to outward migration, lower immigration and lower uptake of UK-based education courses), and to have an adverse impact on the highly skilled activities in VFX, animation and video games.

- **Loss of Creative Europe funding** would deprive mainly smaller, independent film and TV programme producers and distributors from funding for their content and support in participating in industry-wide forums and conventions. The outcome would be loss of jobs and highly cultural content.
- **Loss of freedom of movement of people on a temporary basis**, leading to increased difficulty for EU producers to undertake principal photography in the UK, and vice versa, as well as taking away at least some of the flexibility of filling in temporary employment gaps with EU citizens.
- **Loss of ability to broadcast channels under the COOP** would be particularly impactful for non-domestic channels established in the UK but serving viewers across Europe, potentially leading to relocation of staff out of the UK.
- **Removing co-production financing and support activities** would deprive the UK industry of an important source of funding and support, and of the natural connection to producers in the EU.
- **Loss of support and training funds** (ERDF, Horizon 2020, university and training funds) would, in the medium to long run, contribute to the erosion of UK skills and reduce the competitiveness of the UK-based firms—in particular, in VFX, post-production and animation sectors.

Other risks include lower EU and domestic demand, and the loss of freedom of movement of equipment that would increase the costs and difficulty of UK producers undertaking principal photography in the EU.

The individual risks are summarised in Table 5.2.

Table 5.2 Main risks for the UK's screen sector stemming from the UK's exit from the EU

Policy/legislation/issue	Scale of impact	Applicable in			
		EEA	EFTA	FTA	WTO
Losing FoM of people on a long-term basis (4b)	High			?	●
Losing Creative Europe funding (12)	High			?	●
Losing FoM of people on a short-term basis (4a)	High			?	●
Loss of ability to broadcast channels under the COOP (17)	Medium		●	?	●
Loss of co-production financing and support (9)	Medium				?
Loss of EDRF funding (13)	Medium		●	●	●
Lower EU demand (3a)	Low		●	●	●
Loss of Horizon 2020 funding (14)	Low			?	●
Loss of university and training funds (15)	Low		?	?	●
Loss of FoM of equipment (5)	Low		●	?	●
Lower UK demand (2)	Low	●	●	●	●

Source: Oxera analysis.

Finally, there is a raft of policies and legislation that are unlikely to lead to an impact at present, or would otherwise be unlikely to change after the UK's exit from the EU since they are not directly governed by EU membership. These span:

- **tariffs** on UK exports into the EU, since no tariffs on screen sector goods or services are currently in place between the EU and rest of the world;
- **quotas on 'European works' and independent works**, which are set by a separate convention (ECTT) or by Ofcom, respectively;
- **divergence of regulatory regimes** between the UK and the EU, which in itself does not have an impact, but could lead to other policy impacts.

These issues are summarised in Table 5.3.

Table 5.3 Other policies relevant to the UK's screen sector stemming from the UK's exit from the EU

Policy/legislation/issue	Scale of impact	Applicable in			
		EEA	EFTA	FTA	WTO
Tariffs (6)	Low				
Changes to European quotas (16)	Low				
Changes to independent quotas (18)	Low				
Divergence in regulatory regime (21)	Low		?	?	?

Source: Oxera analysis.

5.2 Conclusions on the exit scenarios

We conclude that, assuming no further negotiations take place, no policy is changed and no new agreements are made, upon leaving the EU, the UK could either:

- retain its membership of the EEA, in which case all of the current policies and legislation would remain unaltered, but the UK would benefit from a depreciated pound; or
- leave the EEA and trade with the EU under 'pure' WTO rules, in which case it would lose the freedom of movement of goods and services and all EU funding, and would cease being subject to all EU/EEA regulation and Directives.

These outcomes would take the UK on two distinct paths: EEA membership would represent a very 'soft' type of exit, with all the present rules and regulations still in place (perhaps most importantly, the freedom of movement would remain unrestricted). The associated impact on the wider economy should be relatively small in the medium to long term, after the temporary uncertainty of negotiations has passed. Conversely, the 'pure' WTO scenario represents a 'hard' exit, with much more profound medium-term macroeconomic impacts.

There are a number of intermediate scenarios between the two discussed above. For the purposes of our analysis, we have identified three.

- If the UK were to maintain freedom of movement of goods, services and people, an EFTA-type arrangement might be more beneficial for the UK's screen sector. In this scenario we have assumed that the UK would opt out from some of the EU regulations—in particular, the proposed copyright and data protection reforms. The exchange-rate impact would be more pronounced, but it would also be possible to sign FTAs with non-EU countries.
- In the absence of freedom of movement, the UK could enter into an FTA with the EU (as well as non-EU countries), with reciprocal provisions across the

screen sector. For instance, we have assumed that the UK would be excluded from the copyright reforms but continue to be able to host channels for broadcast under the COOP. It could also continue to receive funding from Europe-wide sources, including Creative Europe.

- In the event of no freedom of movement, and a lack of reciprocal agreement from the EU, the UK could still improve on the 'pure WTO' outcome by engaging in FTAs with non-EU countries (on a larger scale than if it is also simultaneously negotiating with the EU), as well as adjust the level of its domestic tax reliefs, since it would no longer be bound by EU state aid regulations.

Overall, we conclude that an EFTA-type arrangement may be beneficial to the UK screen sector, although the scenario is predicated on a set of arrangements that seem unlikely given the current state of the negotiations. An EEA arrangement would result in a similar outcome to the current situation, while any of the scenarios based around a WTO-style exit would appear detrimental to the sector as a whole (see Table 5.4 below). This is driven by a combination of factors—in particular, the loss of flexibility of movement of labour, loss of access to content and training funding, changes in rules on broadcasting, etc. Many of these cannot be substituted with additional domestic policies (e.g. additional funding) which the government could offer post-exit.

Table 5.4 Modelled impacts of different exit scenarios

Scenario	Impacts			
	Output[1]	Employment[2]	Cultural[3]	Overall
EFTA-type arrangement	4 to 7	5,000	Small positive	**Positive**
EEA	-2 to 3	300	Limited	**On par**
WTO with screen sector FTA	-10 to -6	-6,500	Moderate negative	**Negative**
WTO with changes to domestic policy	-13 to -7	-11,300	Moderate negative	**Highly negative**
'Pure' WTO	-17 to -11	-14,100	Highly negative	**Highly negative**

Note: These conclusions are based on a set of very specific assumptions on what set of policies and legislation the UK would be able to reach with the EU under different FTA agreements. [1] 'Output' refers to a proportional change in the volume of screen sector content made in the UK annually. [2] 'Employment' refers to the number of jobs gained or lost. [3] Cultural impacts summarised in terms of the magnitude of the overall impact.

Source: Oxera analysis.

The scenarios considered intentionally hinge on the key factor of whether the freedom of movement of labour is enabled in the post-exit situation. While the UK's screen sector would benefit from that freedom being retained, it is likely to be beyond the industry's control or influence.

Nonetheless, this report demonstrates which policies and legislation should be considered a priority in the negotiations, since the 'pure' WTO scenario (with no negotiations at all) is the worst of all possible outcomes for the UK's screen industry. Analysis of the individual policies and legislation suggests that there are a few key elements of any future FTA:

- interdependence between individual policies—it is possible that certain policies would need to be accepted as 'a complete package', preventing the UK from cherry-picking those that are in its particular favour. For instance, the UK is unlikely to be able to continue to receive funds from Creative Europe without accepting freedom of movement;

- reciprocity—many of the policies (e.g. the AVMSD) apply only to members of the EU/EEA, and while other countries can adopt these regulations, they would benefit from the provisions only if the EU/EEA countries reciprocate the agreements. For instance, for UK-based channels to be able to broadcast across the EU after the UK left EU/EEA, reciprocal approval from all the individual countries would be required;
- consistency of regulatory regimes between the UK and the rest of the EU is at the core of such reciprocity being granted.

5.3 Recommendations for next steps and further research

This research has focused on identifying the key areas of impact of EU policies and legislation on the UK's screen sector. The aim was to identify the key issues, and lay the groundwork for future research and influencing strategy.

The proposed next steps are aimed at bridging some of the most obvious gaps in the currently available research and data, as well as giving an indication of the information that the UK government would want the UK's screen sector to provide as support for the upcoming negotiations. Main avenues for further research include:

- producing a comprehensive economic impact assessment for the whole AV (or even the whole creative) sector, taking into account the metrics that the government would want to see (GVA, employment, etc.). This would be helpful in demonstrating the overall case to the government on why the key issues for the screen sector/creative industries should be treated with particular care in exit negotiations, as well as providing opportunities to collate the latest available figures on the key economic metrics to use in all public communications;
- deepening the understanding of the interdependency of individual rules and policies, as well as the likely reciprocity requirements against each of the main pieces of legislation (e.g. COOP and copyright);
- for each of the main regulation, policy and piece of legislation, investigate the range of possible mitigation options and assess their likely impacts, implementation timings and likelihoods;
- investigate the structure and levels of tax relief regimes for screen sector content available in major world economies, and explore the feasibility, costs and likely impacts from adjusting the UK tax relief system to increase its competitiveness;
- review the scope and structure of the existing major bilateral FTAs spanning the screen sector across the world, and model the likely impacts of such agreements being in place between the UK and major non-EU countries. This would be particularly useful in arguing for an early start to FTA negotiations, and providing a constructive start for the government in the process.

A1 Acknowledgements

Given the complex nature of this study, Oxera appreciates greatly the contributions made by a number of organisations listed below:

- Animation UK;
- BFI;
- British Film Commission;
- COBA;
- Creative England;
- Creative Scotland;
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- Directors UK;
- Double Negative;
- Fédération Internationale des Associations de Producteurs de Films;
- Ffilm Cymru Wales;
- Film Distributors Association;
- Film Export UK;
- Fox;
- Independent Cinema Office;
- ITV;
- Northern Ireland Screen;
- Pact;
- Sony;
- UK Cinema Association;
- UK Screen Alliance;
- UKIE;
- Watershed Cinema.

A number of other contributors have chosen to remain anonymous.

To protect the commercially sensitive nature of the information provided, the individual contributions have been anonymised and/or aggregated in the report, unless explicitly stated otherwise.

A2 Glossary

AV	audio-visual
AVMS(D)	Audiovisual Media Services (Directive)
BFI	British Film Institute
BSAC	British Screen Advisory Council
COBA	Commercial Broadcasters Association
COOP	Country of Origin Principle—a principle in EU law for resolving conflict between the laws of different EU member states. In this instance, where a broadcast service is performed in one country but received in another, the applicable law is the law of the country where the action or service is performed. For example, under the Satellite and Cable Directive, rights cleared in one country allow the broadcasting organisations to broadcast to the whole of the EU
Cultural effects	this measure takes into consideration diversity of content source (i.e. the mix of studio and independently produced and developed works) and diversity in content (i.e. the mix of works depicting different cultures, languages and regional identities)
Cultural exemption	many FTAs do not include cultural industries because these industries are treated differently to other industries. This 'cultural exemption' concept was originally enshrined in the 1993 General Agreement on Tariffs and Trade
Digital Single Market	the European Commission's goal for a harmonised and integrated European market without barriers to trade in digital and online services
ECCC	European Convention on Cinematic Co-Production
ECTT	European Convention on Transfrontier Television
EEA	European Economic Area—this provides for the free movement of persons, goods, services and capital within the Internal Market of the EU between its 28 member states, as well as three of the four members of the European Free Trade Association (EFTA): Iceland, Liechtenstein and Norway (see next)
EFTA	European Free Trade Association—an intergovernmental organisation set up for the promotion of free trade and economic integration for the benefit of its four member states: Iceland, Liechtenstein, Norway, Switzerland. Switzerland is the only member of EFTA that is not also a member of the EEA, and has a number of bilateral agreements with the EU that cover many trades in many different industries, including the screen sector
ERDF	European Regional Development Fund
EST	electronic sell-through
EU	European Union
Forex	foreign exchange
FTA	free trade agreement
FTR	Film Tax Relief
GBER	General Block Exemption Regulations
GDP	gross domestic product
GDPR	General Data Protection Regulation
GVA	gross value added
IPTV	Internet protocol television
Pay-TV	pay television services
ROW	rest of the world
STEM	Science, Technology, Engineering and Maths (skills)
STEAM	Science, Technology, Engineering, Arts and Maths (skills)
SVoD	subscription video-on-demand—a service that gives users unlimited access to a wide range of VoD programmes for a monthly flat rate
VFX	Visual effects (part of the post-production process)
VoD	Video-on-demand—an interactive television technology that allows subscribers to view programming in real time or to download programmes and view them later. IPTV technology is often used to bring VoD to televisions and personal computers
WTO	World Trade Organization—promotes free trade by facilitating bilateral trade agreements between countries

A3 Detail of our modelling

A3.1 Overview of the model

All numerical results presented in this report—i.e. projected impacts on employment and content—are based on a high-level economic model of the UK's screen sector. Throughout the modelling, this includes all development/production, distribution and exhibition/broadcasting/retailing, across the five industries within the scope of this report (film, high-end TV,[161] video games, animation and VFX).

We have used the latest available industry statistics to create a static model of the industry in its present shape. Our data spans predominantly employment, content created (films, TV programmes and video games), and consumption of different types of content across different channels/windows (e.g. cinematic, home entertainment or pay-TV revenues for films and TV, or sales of video games across different platforms).[162]

For simplicity, and given the extensive links within the industry, we have assumed that:

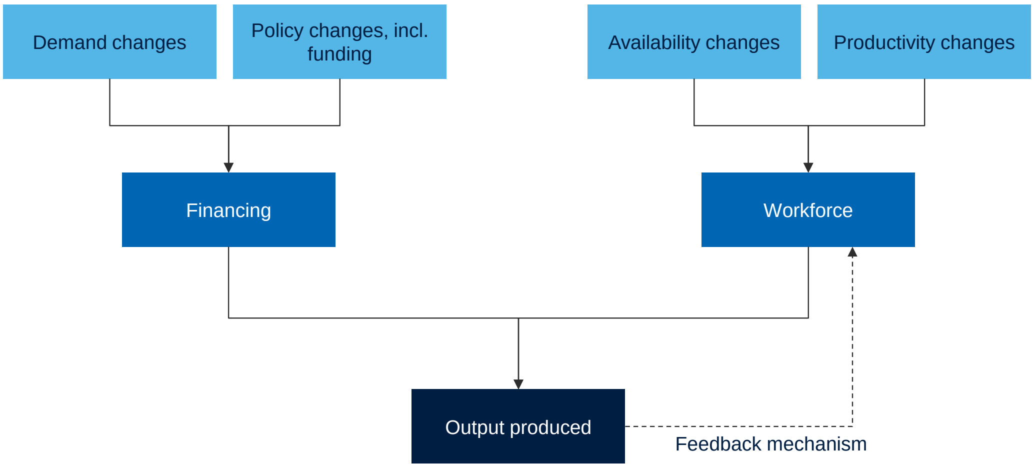
- the content generated by UK-based producers is the predominant driving factor determining the level of employment throughout the screen sector value chain. Increases in content produced are assumed to feed through the distribution, exhibition and retailing activities (and conversely for decreases in content);[163]
- the actual level of content production in the UK is determined by two factors: the availability of financing; and the availability and productivity of workforce required to deliver the output. If either factor falls compared with the status quo, the total industry output produced will decrease.

For instance, consider the scenario in which the UK rejects the freedom of movement, and signs new FTAs with several non-EU countries (ignoring all the other policy changes). The latter effect would, in all likelihood, result in increased availability of international financing for UK-based productions, likely leading to an increase in production (we explain how this mechanism works below). However, that would also imply a need for additional workforce to fulfil the increased labour requirement—without the freedom of movement of labour, the UK's domestic talent pool may not be sufficient to meet the whole requirement. As a result, the actual output increase may be less than would be possible with an unconstrained supply of workforce (and, indeed, if some of the EU workforce leaves the UK, the overall output effect would be negative).

The mechanics of the model are demonstrated on Figure A3.1 below.

[161] As explained in section 1.1, our quantification relates only to high-end TV, even though the issues discussed in the main body of the report relate to the whole TV industry.
[162] Owing to data limitations, this report includes assumptions on both the existing value chains and the changes that would be brought about by exit from the EU. This is due to either a lack of existing data sources in many areas of the UK's screen sector, or a lack of specific research on the likely impacts of exit from the EU on the UK's screen sector. All assumptions used are clearly set out in this appendix.
[163] For distributors, we have also included an assumption on the volume of international content that would need to be distributed in the UK—total employment in distribution is determined jointly with the domestically produced content in the UK.

Figure A3.1 Overview of the underlying economic model



Source: Oxera analysis.

The remainder of this appendix proceeds as follows:

- section A3.2 explains how we have modelled the relationship between financing and output;
- section A3.3 considers the relationship between employment and output;
- section A3.4 explains how individual macroeconomic factors, policies and legislation are fed into the model;
- section A3.5 provides an illustration of our modelling, presenting the impacts of loss of freedom of movement of people on a short-term basis in film production;
- section A3.6 shows the assumptions underlying each of the exit scenarios;
- section A3.7 presents sensitivities around our headline results.
- section A3.8 gives an overview of the information sources used to calibrate the model.

A3.2 Relationship between financing and output

Our modelling differentiates between ten classes of output, as follows:

- **films and high-end TV**: inward investments (studios undertaking part of production in the UK using own staff/equipment), domestic independent, and co-productions;
- **video games**: mainstream (commissioned or part-financed by a major international video games publisher) and independent games.

Each type of screen sector content is funded differently, meaning that the same shock would have very different impacts on individual content types. For instance, changes in the access and level of Creative Europe funding would not affect any of the studio-backed or inward investment productions, but would lead to a financing gap for domestic independent and co-productions. This is reflected in Table A3.1 below.

For instance, we have assumed that for a typical inward-investment film made in the UK, 10% of its financing would come directly from the producer, and a total of 80% from the film's international distribution (in the form of advances, pre-sales, etc.). The remainder would be funded by the UK's tax relief.[164]

Table A3.1 Assumed distribution of financing for different types of content (%)

	Films and high-end TV			Video games	
	Inward investment	Domestic independent	Co-production	Mainstream	Independent
Own funds	10	5	5	20	10
Loans	0	10	10	5	10
Distributors[1]					
Domestic	3	25	15	10	10
EU	12	12	15	15	20
ROW	65	10	5	30	25
UK public funds					
Co-production	0	0	5	-	-
Public subsidy	0	15	20	0	5
Tax relief[2]	10	20	20	20	20
EU funds					
Creative Europe	0	3	3	0	<1
Co-pro and other	0	0	2	0	0
Total	**100**	**100**	**100**	**100**	**100**

Note: [1] 'Distributors' refers to advances or pre-sales. [2] For co-productions, the tax relief received by the production would be split between all co-producing countries. 20% under 'UK tax relief' accounts for all such contributions.

Source: Oxera analysis, based on financing case studies, industry-wide sources and interviews.

In our modelling we have assumed that even small changes to financing are likely to have quite significant effects on the volume of screen sector content produced. This is due to the assumption, confirmed by many of our interviews with producers, that much of the content is 'marginal' in nature, meaning that the available financing is often very limited and tends not to exceed the required level for a particular production. As a result, even small changes in available financing may push a particular film/TV programme/video game from being viable to not being viable. Such relationships tends not to be linear, and hence a 1% reduction in financing can often result in more than a 1% reduction in output.[165]

For the purpose of this report, we use the following multipliers:

- film and high-end TV: 2x for inward investment productions, 3x for domestic studio-backed productions, and 4x for independent and co-productions;
- video games: 2x for mainstream and 3x for independent games.

In the case of a particular policy, regulation or macroeconomic factor leading to an increase in available financing, the 'upward multiplier' has been scaled down by 50% compared with the downward multiplier. This reflects the assumption that content production is 'sticky upwards', and that financing changes are more likely to result in a downside rather than an upside.

[164] Inward investment films are often produced not just in the UK, and the UK tax relief portion of funding applies to the UK-based spend only. This is in contrast to domestic independent productions.
[165] Oxera and O&O (2016) 'The impact of cross-border access to audio-visual content on EU consumers', May, Appendix A1.3.

A3.3 Relationship between employment and output

The second crucial aspect of our modelling is employment. Across all parts of the value chain other than production, we have assumed that the UK employment required would be proportional to today's productivity and today's output. For instance, film production employs approximately 60,700 people across the UK, and in 2015 approximately 200 new films were (at least in part) made in the UK.[166] This would imply that a new film release corresponds to approximately 300 jobs (assuming they were fully variable). Accounting for a portion of the jobs that could be fixed, changes in output produced in the UK would have a direct impact on the number of films shown in UK cinemas, and hence the level of employment. We have applied similarly simplified logic to broadcasting and TV, as well as to the distribution of films, TV programmes and video games.

The only major area of difference is content production. Given that some of the macroeconomic changes resulting from the UK's exit from the EU may lead to restrictions in the freedom of movement of labour, or even an outflow of currently employed EU workers from the UK, it is important to factor in these effects on the total output produced. We do so in the following steps:

- using the known data on content production and employment, we estimate the present level of 'productivity', or number of workers required for a production of a particular type of output;
- based on the changes to financing and any other 'non-employment'-linked factors, we estimate the implied change in total output produced using the multiplier approach (explained in the previous section);
- we factor in changes to employment such as outflow of EU workers and (incomplete) replacement with UK-based workers, and any productivity losses (e.g. due to reduced training funds);
- we check whether the new level of content production is consistent with the available workforce, and adjust downwards further if necessary.

A3.4 Specific macroeconomic factors, policies and legislation

This section explains how individual policies, legislations and macroeconomic factors are treated in our model. The individual assumptions are summarised in Table A3.2, and explained below. For the avoidance of doubt, all changes are expressed as percentage increases on the current base, e.g. a 10% tax relief increase for an inward investment production would represent an overall increase in financing for that type of content of 1% (since UK tax reliefs account for 10% of total budget, see Table A3.1 above).

While many of the assumptions are informed by existing evidence,[167] for others (e.g. freedom of movement) we were required to make assumptions without the necessary evidence base. These are identified with a label 'pure assumption' below.

(1) Depreciated sterling—we assumed 5% loss of UK consumption of foreign content, and an increase of consumption in the EU and rest of the world (ROW) by 13–16%, reflecting current devaluation. Increased consumption feeds through to increased financing, allowing for greater content output. This also captures

[166] Employment information based on Table 2.1; film production based on British Film Institute (2016) 'Screen sector production in 2015', June, see Figure 2.
[167] Details of the available data are provided throughout the relevant parts of section 3.

increased demand for UK-based centres of excellence in, for example, post-production and VFX. Applies to the whole screen sector. *(Informed assumption)*

(2) Fall in domestic demand—as a response to uncertainty and any potential post-exit recession, we assumed a loss of domestic demand of 2%. This feeds directly into distributor advances and pre-sales in content financing, and applies to the whole screen sector. *(Pure assumption)*

(3a) Fall in EU demand—linked to uncertainty and any potential post-exit recession, or to a reputational fallout of exit on demand for British content, we assumed a 4% fall in consumption of UK-produced content in EU countries. This feeds into lower distributor advances in content financing, and applies to the whole screen sector. *(Pure assumption)*

(3b) Free trade deals with ROW—after exit, the UK is assumed to be able to sign free trade deals with non-EU countries, and thus stimulate international demand for UK-produced film and TV content. An assumed increase of 10% (against a relatively low current base) for the screen sector directly increases content financing from international distributors. *(Pure assumption)*

(4a) Restriction on free movement of people (short term)—facing difficulty in international travel, we assumed the industry would suffer an outflow of 7.5% of EU workers, and the productivity of the remaining workforce would be reduced by 2% across the whole screen sector. This places a cap on how much output can be produced in the UK across the whole sector, and has a particular impact on highly skilled areas like VFX and animation. *(Pure assumption)*

(4b) Restrictions on free movement of people (long term/permanent)—this is a more impactful version of (4a), with an assumed outflow of 15% of EU nationals, with a 5% reduction in production productivity and 10% reduction in distribution productivity. *(Pure assumption)*

(5) Restrictions on freedom of movement of equipment—we assumed a small, 0.5% loss of productivity in production, affecting the number of films and TV programmes that are produced. *(Pure assumption)*

(6) Tariffs—as explained in section 3.2.2, the introduction of tariffs seems unlikely, and has not been modelled. *(Not modelled)*

(7) Avoiding changes to the cross-border copyright regulation—since the proposed changes undermine territoriality of content, they are likely to lead to a reduced revenue pool for international distributors of UK-produced content, and thus are assumed to lower the distributor advances from the EU by 10% for home entertainment, linear and non-linear forms of distribution, and by 5% for exhibition. If the UK chooses to stay outside of the scope of this regulation, the assumed loss is assumed to be only 5%, thus the impact of not adopting changes to copyright regulation is +5% of EU distributor financing versus the status quo for home entertainment, linear and non-linear forms of distribution, and +3% for exhibition. This applies for film and TV content only. *(Informed assumption)*

(8) Avoiding portability regulation—it would allow UK broadcasters to realise some cost savings by avoiding a proposed EU regulation. The overall scale of this benefit has been approximated as equivalent to a 3% productivity increase, which offsets an equal loss if the UK were to remain in the EU. There is no impact on the games industry. *(Pure assumption)*

(9) Changes in co-production arrangements—we assume a loss of the entirety of co-production funds for both film and TV production. This does not apply to the video games industry. *(Informed assumption)*

(10) Avoiding geo-blocking regulation—there would be some (small) gains for UK retailers if they were not bound by the forthcoming restrictions on geo-blocking (relative to the status quo where the regulation is binding—similar to changes on copyrights in (7) above). We assume a 2% loss in EU home entertainment consumption of UK content for film and TV content, and a 2% loss in all EU consumption of UK video games content in the status quo, and a loss of only 1% if the regulation is not binding. *(Informed assumption)*

(11) Increase in tax reliefs—this would create an additional pool of financing for content production, and attract additional inward investments. We have assumed that the tax relief funding would increase by 10% (this value has been chosen solely for demonstration purposes). *(Pure assumption)*

(12) Withdrawal of Creative Europe funding—we have assumed that this would lead to a removal of all the funding linked with Creative Europe, affecting mostly independent film and TV financing. *(Informed assumption)*

(13) Withdrawal of ERDF funding—as (12) above, but applying to regional development funds. *(Informed assumption)*

(14) Removal of Horizon 2020 funding—since these funds are linked with developing local talent pools, we have assumed that their removal would constitute a 0.5% loss of productivity of labour in production. This loss is likely to become exacerbated over a longer time horizon[168] (compared with the status quo). *(Pure assumption)*

(15) Removal of university funding—similarly to (14), we have used the same underlying assumptions of 0.5% productivity loss in the short to medium term. As with (14), this would be exacerbated in the medium to long term. *(Pure assumption)*

(16) Change of ‘European’ work quotas—as explained in section 3.3.4, the current classification of the work as ‘European’ is not linked to UK’s membership of the EU, and has not been modelled. *(Not modelled)*

(17) Loss of eligibility to broadcast channels under the COOP—this is assumed to lead to a loss of 75% of employment linked with the non-domestic channels established in the UK. We proxy this by assuming a 2% production productivity loss, and a 15% distribution productivity loss in films. The impact is greater on the TV industry for which we assume that production productivity would be reduced by 5% and distribution productivity by 35%. The video games industry is unaffected. We have explicitly assumed that the only activities that move out of the UK would be related to the editorial control, and the commissioning of content would remain—this is a conservative assumption. *(Informed assumption)*

(18) Removal of independent work quotas—as explained in section 3.3.4, current quotas in the UK are higher than those set under EU regulations, and have not been modelled. *(Not modelled)*

[168] There is a well-established link between worker skill level and productivity. See, for example, Gambin (2009), ‘Exploring the Link Between Skills and Productivity’, see: https://www2.warwick.ac.uk/fac/soc/ier/publications/2009/gambin_et_al_2009_skills.pdf last accessed 12 December 2016.

(19) Avoiding GDPR regulation—video games developers and publishers could avoid having to implement additional EU-wide regulation, and benefit from minor cost savings. We have modelled this benefit by allowing for a 1% productivity gain (relative to the status quo of remaining in the EU). *(Pure assumption)*

(20) Avoiding new rules on establishment—as noted in section 3.3.5, this change in regulation has not been modelled separately on a stand-alone basis. *(Not modelled)*

(21) Divergence in regulatory regimes—as explained in section 3.3.6, similarity of regulatory regimes between the UK and the EU underpins many of the other policies and legislation, and has not been modelled separately on a stand-alone basis. *(Not modelled)*

Table A3.2 Main modelled assumptions behind the individual policies and legislation changes

Factors and policies	Film	High-end TV	Video games	Animation and VFX
Macroeconomic				
1 Depreciated sterling	UK consumption of foreign content -5% EU and ROW consumption of UK content +13–16% to reflect depreciated pound	Same	Same	Increase in inward investment demand
2 Lower UK demand	All UK demand -2%	Same	Same	Not applicable
3a Lower EU demand	All EU demand -4%	Same	Same	Not applicable
3b Increased ROW demand	ROW demand +10%	Same	Same	Not applicable
Movement				
4a Loss of FoM people (short term)	7.5% loss of production labour 2% production productivity loss	Same	Same	More pronounced labour and productivity losses
4b Loss of FoM of people (long term)	15% loss of labour across all activity 5% productivity loss in production and 10% in distribution	Same	Same	More pronounced labour and productivity losses
5 Loss of FoM of equipment	0.5% productivity loss in production	Same	Not applicable	Not applicable
6 Tariffs	No impact	No impact	No impact	No impact
Cross-border				
7 Avoiding copyright reforms	If UK remains in EU: 10% loss of EU home entertainment, linear and non-linear consumption, and 5% loss of EU cinema consumption If UK leaves: 5% loss of EU home entertainment, linear and non-linear consumption, and 3% loss of EU cinema consumption	Same	Not applicable	Not applicable
8 Avoiding portability regulation	If UK remains in EU: 3% productivity loss in distribution If UK leaves: no change	Same	Not applicable	Not applicable

Factors and policies	Film	High-end TV	Video games	Animation and VFX
9 Loss of co-production funds/support	100% loss in co-production funds	Same	Not applicable	No impact
10 Avoiding geo-blocking reform	If UK remains in EU: 2% loss in EU home entertainment consumption of UK content If UK leaves: no change 1% loss in EU home entertainment consumption of UK content	Same	Same (applying to all video game consumption)	Not applicable
Funding				
11 Increased tax reliefs	+10% tax relief funding	Same	Same	Same
12 Loss of Creative Europe funds	-100% MEDIA funding	Same	Same	Same
13 Loss of ERDF funds	-100% ERDF funding	Same	Same	Same
14 Loss of Horizon 2020 funds	0.5% productivity loss in production	Same	Same	More pronounced productivity losses
15 Loss of university funding	0.5% productivity loss in production	Same	Same	More pronounced productivity losses
AVMSD (film and TV)				
16 European quotas	No impact	No impact	Not applicable	No impact
17 Loss of ability to broadcast under COOP	2% productivity loss in production 15% productivity loss in distribution	5% productivity loss in production 35% productivity loss in distribution	Not applicable	No (direct) impact
18 Independent works quota	No impact	No impact	Not applicable	No impact
Video games				
19 Avoiding GDPR	Not applicable	Not applicable	If UK remains in the EU): 1% productivity loss in development and publishing If UK leaves: no impact	Not applicable
20 No change to establishment criteria	No impact	No impact	No impact	No impact
Other				
21 Divergence in regulation	No impact	No impact	No impact	No impact

Source: Oxera analysis.

A3.5 Stylised example: impacts of loss of freedom of movement of people on a short-term basis (4a) in film production

As presented in section A3.4, we have assumed that the loss of short-term freedom of movement of people leads to an outflow of 7.5% of EU nationals from UK's film production, as well as a 2% loss of productivity of the remaining workforce. These changes have an impact on the employment and output levels, which we detail below.

First, we consider the impact of changes in the available workforce and what this implies on the level of output that can be produced, as shown in Box A3.1.

Box A3.1 Worked example of employment impacts

FTEs given changes in labour mobility	
total full-time employment	47,770
UK nationals	44,952
EU nationals	2,818
modelled changes	
change EU FTEs	-7.5%
EU FTEs scenario	2,607
assumption on replacement of EU FTEs lost	50%
new UK jobs via replacement	105
total available FTEs scenario	47,663
FTEs given new output level	
current productivity	0.004
modelled changes	
productivity change	-2%
required jobs at new output	48,745
Impact on output	
output impact	-2%
Overall impact	
total FTEs present	47,770
total FTEs scenario	46,671
percentage change	-2%

We start with the total number of FTEs in UK film production, differentiating between UK and EU nationals.

The loss of freedom of movement of people on a short-term basis leads to an assumed loss (outflow) of 7.5% of EU employees. We assume that 50% of these lost FTEs are replaced via domestic, UK staff.[1] We thus obtain the total available FTEs in the scenario.

There is no financing-induced shock to output, and therefore employment is not influenced by the variations in output.

Nevertheless, this scenario implies a 2% decrease in the productivity level. This induces a shortfall in required employment, which leads to a -2% impact on output produced (see below).

We thus obtain the final labour force in film production under scenario 4a. Employment falls by approximately 1,100 FTEs.

Note: Intermediary numbers may not exactly lead to the overall result due to rounding. [1] This number is included in the overall decrease of 1,300 FTEs across the film industry under this policy, see box in section 3.2.2. The remaining 200 FTEs are lost across distribution and exhibition part of the industry (not shown in this worked example). [1] This assumption represents a blended ratio of replacement of staff in a highly specialised part of the industry, for instance VFX and animation, and in other activities.

Similarly, Box A3.2 below shows the modelled results on the output side.

Box A3.2 Worked example of output impacts

Domestic productions	
no. films present	124
modelled changes	
financing-induced change	0%
no. films scenario	124
Co-productions	
no. films present	30
modelled changes	
financing-induced change	0%
no. films scenario	30
Inward investment productions	
no. films present	47
modelled changes	
financing-induced change	0%
total scenario	47
Impact from employment changes	
adjustment from employment constraint	-4
total films scenario	197
Overall impact	
total films produced present	201
total films produced scenario	196
percentage change	-2%

We start with the number of domestic, co-production, and inward investment films produced.

Given that a negative shock to short-term movement of people does not imply an impact on financing, there is no change in output induced by variations in financing.

A loss in short-term movement of people nevertheless negatively affects the level of employment, which in turn has a negative incidence on output. The outflow of EU workers that is not replaced domestically, as well as a reduction in overall productivity lead to a greater number of required employees in film production than are actually available. This translates into a negative adjustment of 2% on film output, which leads to a loss of an estimated four films.

We thus obtain the final number of films produced in the UK under scenario 4a, with the overall percentage change of -2%, as presented in section 3.2.2.

Note: Intermediary numbers may not lead exactly to the overall result due to rounding.

A3.6 Detail of individual exit scenarios

Individual policies and legislation changes are all grouped into combined exit scenarios, as explained in sections 1.2 and 4.1. We have assumed that certain macroeconomic factors in particular are more than binary in their nature, and Table A3.3 shows how each of them feeds into the model under the exit scenarios.

Table A3.3 Assumptions and scaling of impact behind individual exit scenarios

	EEA	EFTA	Favourable FTA	WTO (base)	WTO (no upsides)
Macroeconomic					
1 Depreciated sterling	0.5	0.7	0.8	1.0	1.0
2 Lower UK demand	1.0	1.0	1.3	1.3	1.3
3a Lower EU demand	1.0	1.0	1.3	1.3	1.3
3b Increased ROW demand	-	0.5	0.8	1.0	-
Movement					
4a Loss of FoM of people (short term)	-	-	0.5	1.0	1.0
4b Loss of FoM of people (long term)	-	-	0.5	1.0	1.0
5 Loss of FoM of equipment	-	-	-	1.0	1.0
6 Tariffs	-	-	-	1.0	1.0
Cross-border					
7 Avoiding copyright reforms	-	1.0	1.0	1.0	1.0
8 Avoiding portability regulation	-	1.0	1.0	1.0	1.0
9 Loss of co-production funds/support	-	-	-	-	-
10 Avoiding geo-blocking reform	-	1.0	1.0	1.0	1.0
Funding					
11 Increased tax reliefs	-	-	-	1.0	-
12 Loss of Creative Europe funds	-	-	-	1.0	1.0
13 Loss of ERDF funds	-	-	-	1.0	1.0
14 Loss of Horizon 2020 funds	-	-	-	1.0	1.0
15 Loss of university funding	-	1.0	1.0	1.0	1.0
AVMSD (Film and TV)					
16 European quotas	-	-	-	-	-
17 Loss of ability to broadcast under COOP	-	-	-	1.0	1.0
18 Independent works quota	-	1.0	1.0	1.0	1.0
Video games					
19 Avoiding GDPR	-	1.0	1.0	1.0	1.0
20 No change to establishment criteria	-	1.0	-	1.0	1.0
Other					
21 Divergence in regulation	-	1.0	1.0	1.0	1.0

Source: Oxera analysis.

A3.7 Modelled results and sensitivities

This section presents the sensitivity of our analysis given a slightly changed assumption set, whereby we have assumed that the input scaling factors shown above are either 20% lower, or higher.

Table A3.4 Sensitivity of results on individual policies and legislation

Policy/ legislation/ lever	Current impact		Assumptions -20%		Assumptions +20%	
	Employment ('000)	Output (%)	Employment ('000)	Output (%)	Employment ('000)	Output (%)
Macroeconomic						
1 Depreciated sterling	6.5	7 to 9	5.6	6 to 7	7.9	8 to 12
2 Lower UK demand	-0.3	–	-0.2	–	-1.1	-2 to 0
3a Lower EU demand	-0.5	-1–0	–	–	-1.9	-3 to 0
3b Increased ROW demand	3.6	3–4	2.6	2–3	4.2	3 to 4
Movement						
4a Loss of FoM of people (short term)	-1.7	-2 to -2	-1.5	-2–-2	-2.2	-3 to -2
4b Loss of FoM of people (long term)	-5.0	-6 to -5	-4.0	-5–-4	-6.1	-7 to -6
5 Loss of FoM of equipment	-0.4	-1–0	-0.2	–	-0.4	-1 to 0
6 Tariffs	–	–	–	–	–	–
Cross-border						
7 Avoiding cross-border copyright reforms	0.9	0 to 2	0.2	–	0.9	0 to 2
8 Avoiding portability regulation	0.2	–	0.2	–	0.2	–
9 Loss of co-production funds/support	-1.0	-3 to 0	-0.8	-2 to 0	-1.0	-3 to 0
10 Avoiding geo-blocking reform	0.1	0 to 1	–	–	0.1	0 to 1
Funding						
11 Increased tax reliefs	1.6	2 to 3	1.5	2 to 3	1.6	2 to 3
12 Loss of Creative Eur. funds	-2.3	-7 to 0	-2.2	-6 to 0	-3.3	-10 to 0
13 Loss of ERDF funds	-0.9	-3 to 0	-0.9	-3 to 0	-1.1	-3 to 0
14 Loss of Horizon 2020 funds	-0.5	-1	-0.2	–	-0.5	-1
15 Loss of university funding	-0.5	-1	-0.2	–	-0.5	-1
AVMSD (Film and TV)						
16 European quotas	–	–	–	–	–	–
17 Loss of ability to broadcast under COOP	-1.6	–	-1.4	–	-1.8	–
18 Independent works quota	–	–	–	–	–	–
Video games						
19 Avoiding GDPR	0.1	0 to 1	0.1	0 to 1	0.1	0 to 1
20 Same establish. criteria	0.4	0 to 3	0.3	0 to 2	0.4	0 to 4
Other						
21 Divergence in regulation	–	–	–	–	–	–

Source: Oxera analysis.

Table A3.5 Sensitivity of overall scenario results

Scenario	Current impact		Assumptions -20%		Assumptions +20%	
	Employment ('000)	Output (%)	Employment ('000)	Output (%)	Employment ('000)	Output (%)
EFTA-type arrangement	5.0	4 to 7	4	3 to 6	6	5 to 9
EEA	0.3	-2 to 3	1	0 to 2	1	-1 to 3
WTO with screen sector FTA	-6.5	-10 to -6	-5	-7 to -4	-8	-12 to -7
WTO with changes to domestic policy	-11.3	-13 to -7	-9	-10 to -5	-15	-17 to -9
'Pure' WTO	-14.1	-17–-11	-11	-13 to -8	-18	-22 to -13

Source: Oxera analysis.

A3.8 Sources of information

The information used to calibrate the model comes from multiple sources, including Oxera's previous work in the AV sector, numerous interviews and, perhaps most importantly, numerous reports and data files. Some of the main sources include:

- data from the 2016 BFI Statistical Yearbook, as well as previous Yearbooks;
- video games industry figures published by Ukie;
- economic estimates on the AV sector from the Department for Culture Media and Sport;
- ONS data on international trade in services and sector-wide employment statistics;
- existing impact assessment study on the economic contribution of the UK's screen sector to the economy by Olsberg Spi and Nordicity (from 2015);
- selected private data received from numerous industry stakeholders and interviewees.

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