

# DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS



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# FOREWORD

DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS

Europe's economy is becoming ever more reliant on intellectual property. During the past years, the EUIPO, acting through the European Observatory on Infringements of Intellectual Property Rights, has carried out a number of studies demonstrating the economic importance of IP rights in generating economic activity and employment in the European Union.

New digital technologies and business models not only create new economic opportunities for firms but also possibilities to enhance the general public benefits associated with better access to knowledge and cultural goods. Many of these opportunities rely on the creative transformation of existing content and devising ways of delivery that are better suited to contemporary audiences.

Europe has a rich cultural heritage, not least in literary works. These works, while enjoyed by readers in their own right, also serve as the basis for many film screenplays, for both European and non-European producers. This report examines the role played by works in the public domain and compares films based on such works with those based on works protected by copyright or on original screenplays.

The study combines data from rich online repositories of film and book related information, complemented with information collected by the European Audiovisual Observatory. Close to 90 000 films released between 2000 and 2010 form the basis for the analysis. This analysis shows that while only a small proportion of films released in the European Union are based on literary works in the public domain, among the most popular films that proportion is higher than for films overall.

Thus, the literature that forms an important part of Europe's culture and history also plays an important part in serving as a source of material for modern entertainment, enjoyed by millions of viewers in Europe and beyond.

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DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS

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# 1. EXECUTIVE SUMMARY

DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS

New digital technologies and business models not only create new economic opportunities for firms but also possibilities to enhance the general public benefits associated with better access to knowledge and cultural goods. Many of these opportunities rely on the creative transformation of existing content and devising ways of delivery that are better suited to contemporary audiences. Derivative usage of pre-existing content is shaped by copyright provisions regulating the way authors of original content and their heirs are compensated by follow-on creators. Copyright regulations, however, also allow uses that do not require such compensation or permission either by listing exceptions from the general rules of copyright protection or by limiting its temporal scope. The public domain is a legal construct that aims to enhance social benefits by allowing unconstrained access and the transformation of previous creative works.

Economic theory is, however, not conclusive as regards predictions of the effects of the fall of a work into the public domain. It is presumed that public domain status, due to its lack of exclusive economic rights over the work, enhances use thereof. However, some scholars and industry representatives emphasise the risks associated with the change of protection status. A fall into the public domain may result in a lack of incentives in the preservation of works or their disappearance. It may trigger substantial overuse, as there is no entity that cares about the preservation of a work's value, and anyone is entitled to adapt a work. Conversely, if there is no chance of preventing competitors from producing derivative works based on the same original content, producers may refrain from adapting the public domain or invest substantial amounts of money into adaptation projects. A lack of empirical data on the derivative use of pre-existing content makes it difficult to verify which of these possible theoretical scenarios is the most adequate. Yet this issue is crucial in order to assess the existing copyright framework and legislative proposals aiming to adapt it to the new economic circumstances. If excessive public domain leads to the disappearance or underutilisation of works, its scope should be curtailed. If, however, it brings new opportunities for firms and the general public without diminishing the creators' incentives, its scope can be broadened for the benefit of society as a whole.

Possible benefits or threats to copyright protection and public domain status can be assessed only on the basis of empirical data. However, empirical data on copyright is very difficult to assemble. Most of the necessary data is dispersed and privately held. New online repositories of information on creative content offer, however, new opportunities for researchers. Although often limited to particular sectors, they allow for empirical analyses that can better inform policy.

For the present project data has been assembled from rich online repositories of film and book related information: the Internet Movie Database (IMDb) and Goodreads, complemented with information on admissions to European cinemas collected by the European Audiovisual Observatory. Based on these sources, the final project dataset of 87 455 unique films, produced between 2000 and 2010 and released in at least one Member State of the European Union, was prepared. For each film in the dataset it was determined whether the film's screenplay was entirely original, based on pre-existing content still under copyright protection, or based on pre-existing content already in the public domain.

Although the data is limited to the film industry, the broader objective of the present report is to document the general phenomenon of usage of public domain content as a basis for new creative projects. Due to the limitations of the gathered data that does not allow for a counterfactual analysis of the various parameters of copyright protection, the present analysis has necessarily a static and descriptive character. By looking into various aspects of derivative usage of public domain content in the film industry, it is possible to check whether various opportunities and threats associated with the public domain in previous literature are well founded. The report does not tackle, however, the issue of the optimal design of copyright protection from the point of view of social welfare.

The film sector has a high cultural and economic significance for European citizens. There is an abundance of anecdotal evidence regarding the importance of adapting pre-existing content not only for individual producers but also for the entire sector in general. The film industry, due to the unique combination of its characteristics, is especially hit-dependent and risky. As explained by recent economic research, an adaptation of pre-existing content, already tested on different but related cultural markets, may help reduce the uncertainty inherent to the sector. There are also other artistic reasons that make adaptations an interesting option for film producers.

Since the concept of adaptation is not defined in the Berne Convention, the project team relied on the common principles derived in the doctrine, laws and jurisprudence of the EU Member States and the United States. As the overall impression and recognition of the similarity between original works and derivatives by a lay person are recurring elements of adaptation definitions in the consulted sources, reliance on the opinion of thousands of IMDb users is a powerful and objective criterion in the identification of film adaptations in the project dataset. Biographical information about the authors of pre-existing content in IMDb and Goodreads and national copyright laws of the film production countries constituted major sources used to determine the protection status of the works used as base materials for adaptations. Notwithstanding the substantial degree of harmonisation of the copyright protection term in recent years, there are still differences in the rules governing the determination of the expiration date of copyright protection. These differences have been duly analysed and taken into account during the data preparation phase.

Analysis of the data gathered for the project has shown that use of **public domain content as a basis for film adaptations amounts to approximately 2 % of the films released in the European Union. Uptake of public domain content is, however, higher among the most popular films and reaches 6 % among the 100 most popular films in European cinemas.**

During the eleven years studied in the analysis, **film adaptations based on the public domain were seen in European cinemas by over 330 million people, which amounted to almost 4 % of the overall cinema audience. At the same time, attendance for cinematographic adaptations based on copyright protected content corresponded to 35 % of the total cinematographic audience.**

A simple comparison of film attendance based on adapted content does not take into account the important impact of time dimension on the likelihood of adaptation of pre-existing content. From the fifth year following first publication, a rapid exponential decline in the economic value of creative content for derivative purposes can be observed. **The likelihood of a book to be used as a basis for film adaptation 12 years after first publication is already 50 % lower than in the first five years following first publication. The odds of adapting a book 70 years after its first publication are 95 % lower than in the first few years that it is available in bookstores.** The decline of the derivative value of creative content affects all but the most important masterpieces of human creation. As a result, **a change in protection status, which in the majority of countries is set currently at 70 years pma, important as it may be for some creative works is not a major watershed that can affect film producers' adaptation decisions in general.**

A comparison of the appeal that adapted content has for contemporary readers has shown that **adapted books already in the public domain attract much higher readers' attention than those that are still under copyright.** Adapted public domain books have also higher ratings in Goodreads compared with their counterparts protected by copyright, although here the difference is not as large.

Although the majority of books were adapted just once during the analysis period, some public domain books were adapted more frequently. As expected, **the average number of film adaptations of public domain books in the dataset was 1.45 compared with 1.04 for books still under copyright protection.**

An analysis of the dataset demonstrated that **the possibility of using the same content by others does not discourage producers from investing substantial sums of money into films based on public domain content.** The mean budget of public domain based film adaptations, although lower than of film adaptations based on copyright protected content, is larger than the mean budget of films based on the entirely original screenplay.

A cluster analysis of the project data showed that there are film producers making public domain content a substantial part of their value proposition; established, well-known film producers use public domain content more frequently than the average film producer in the dataset.

**Analysis of the budget data of films and the profiles of the film producers using public domain content as a basis for their film adaptations does not confirm the risks of under- or over-exploitation of public domain content for derivative purposes.**

The econometric models confirm the existence of private benefits, both in terms of the number of viewers and the box office, from the adaptation strategy for all producers using previous content protected by copyright as a basis for film screenplays. Similar benefits, in terms of the number of cinema viewers, could be confirmed for the local film producers adapting public domain content. However, the data analysis did not confirm the existence of any premium in terms of box office revenue for public domain adapters nor attendance premium for public domain adaptation for foreign producers.

An econometric analysis confirmed the private benefits linked with the possibility to test the popularity of the adapted content on different, but related markets. As suggested in previous economic literature, **adaptation may be an effective strategy to reduce uncertainties. The difference in the results between the premiums stemming from adaptation of the content that is protected by copyright and content in the public domain may suggest, however, the existence of additional private benefits associated with exclusive rights for adaptation.** Limitations of the data gathered for the present report do not, however, allow for testing whether private benefits from exclusive rights for adaptation prevail over the possible social loss associated with a lower variety of the adapted content. A full assessment of the overall social welfare impact of different copyright designs regulating derivative rights should be then the main area for future research.



## 2. OBJECTIVES, CONTENTS AND SCOPE OF THE STUDY

DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS

### 2.1 BACKGROUND AND PURPOSE OF THE STUDY

One of the tasks entrusted to the European Observatory on Infringements of Intellectual Property Rights in Regulation (EU) No 386/2012 of the European Parliament and of the Council of 19 April 2012 is *'collecting, analysing and disseminating relevant objective, comparable and reliable data regarding the economic value of intellectual property and its contribution to economic growth, welfare, innovation, creativity, cultural diversity, the creation of high-quality jobs and the development of high quality products and services within the Union'*<sup>1</sup>.

Implementing this objective, the Observatory produced several reports focused on the contribution of intellectual property rights (IPR) to the European economy, financial performance of individual companies and IPR perception by European citizens. Proper understanding of the value of intellectual property rights requires, however, also an objective assessment of the benefits and risks associated with the lack of intellectual property rights protection for certain works residing in the public domain.

Thanks to technological progress and the existence of public institutions such as libraries, access to original works is less problematic than in the past<sup>2</sup>. New technologies create the possibility to benefit from cultural goods through many different channels. Delivery of creative content through those channels often depends on the possibility of creative transformation and re-use of pre-existing content.

As emphasized by Jose Luis Borges in *'Pierre Menard, Author of the Quixote'*, the same story, even if retold with exactly same words in other historical circumstances, conveys different meanings and different interpretations and therefore may still be attractive for the cultural audience years or even centuries after its first publication. Pre-existing content thus opens up new creative and business opportunities for follow-on creators who are able to add new value to the existing story by transferring it to another medium, enriching it with new creative material, differently accentuating its various plots or adding their own fresh interpretation to it. Copyright still poses, however, some important limitations to the scale and scope of derivative re-use of pre-existing content.

<sup>1</sup> - Article 2(c) of Regulation (EU) No 386/2012.

<sup>2</sup> - Although there may be still important barriers as regards digitalisation of works and their accessibility in the digital form.

In economic literature copyright is often portrayed as a trade-off between incentives and accessibility (Landes & Posner, 1989; Waldfogel, 2013). Copyright provisions contribute to both objectives by not only regulating the rules of compensation to authors and their heirs but also by leaving an important repository of creative content outside of its scope, allowing for its free and mostly unconstrained use. If properly structured, copyright should be seen as a legal tool enabling proper rewards for creators, increasing the volume of available creative materials and opening up the possibility of creative re-use of the most valuable content by follow-on creators. The scope of the public domain is one of the important factors in determining whether a copyright framework is an optimal one. Contradictory opinions regarding the economic and social role of the public domain and the consequences of a change of protection status of a work are often brought up in public debates. Those opinions are, however, rarely supported with objective empirical evidence. As highlighted by Hargreaves (2011), the reason is that much of the relevant data is dispersed, privately held and enters the public debate in support of particular viewpoints only.

New technologies and online content repositories create an opportunity for researchers to embark on new initiatives based on independent data gathering that can objectively inform public policy. The broad objective of the present report is to document the usage of public domain content as a basis for new creative projects. In the view of the Observatory, such analysis is useful and necessary before a more sophisticated economic welfare analysis is embarked upon and provides more evidence regarding the dynamic consequences of future changes to the current copyright framework.

The film industry has been chosen as a sector of investigation mainly because of the accessibility to data, but also because it is a very dynamic and important subset of the creative industries producing content appealing to millions of viewers. The film industry is also important from an economic point of view. In Europe, it is represented by over 75 000 companies, employing over 370 000 people and receiving close to EUR 60 billion in revenue in 2010 (Katsarova, 2014).

## 2.2 THE MEANING OF ‘PUBLIC DOMAIN CONTENT’ IN THE CONTEXT OF THE STUDY

There is no single, universally accepted definition of the public domain (Samuelson, 2006). Copyright law — be it at national or at supranational level — does not usually provide any positive definition of the public domain. However, limitations as regards the scope, the subject matter and the duration of copyright protection leave many creative works outside its domain (Dusollier, 2011). Those works become part of the ‘public domain’, that is to say, they can be freely used without the author’s consent (Benabou & Dusollier, 2009).

Dusollier (2011) divided the public domain into the following spheres.

- **Ontological public domain** is composed of elements that fail to meet the requirements of eligibility for copyright protection. These can be, for example, ideas, methods, rules or principles, facts, information or daily news.
- **Subject-matter public domain** consists of works that could normally be eligible for copyright protection, but there are some additional legal requirements preventing the work from being protected by copyright. Such requirements can be, for example, the fixation of a work or the fulfilment of formalities or origin in a certain territory. Unoriginal works also form a part of subject-matter public domain.
- **Temporal public domain** contains all the works that were protected by copyright, but the term of protection has lapsed.
- **Policy public domain** consists typically of official texts (laws, decisions etc. in the event they are excluded from copyright protection); in some countries there can be also expropriated works, infringing derivative works<sup>3</sup> or works of authors deceased without heirs.
- **Voluntary public domain** is a category consisting of works relinquished into the public domain, if the law of the respective state allows for it.

There are two main theoretical perspectives delineating the public domain in legal and economic literature. The broader perspective sees the public domain as a range of possible uses, *'reserved spaces of freedom inside the intellectual property'* (Boyle, 2009) that any person can make without seeking the consent of rights owners. This vision is complex, as many of the possible uses are circumstantial and depend on the particular conditions of use<sup>4</sup>.

This is why most empirical research defines the public domain as a category that is the inverse of copyright protection, and often limits its scope to the temporal public domain. Similarly, the present study focuses on the derivative use of creative works being part of temporal public domain and works that predate the contemporary concept of copyright law<sup>5</sup>. The other categories had to be left aside either because their usage by the film industry is very low or the establishment of a link between the public domain piece of work and the film is impossible with the data at hand. For instance, elements from the ontological public domain are potentially a rich source of inspiration for film adaptations; however, it is very difficult to track the use of those elements (e.g. unprotected ideas) in individual films.

3 - See, for example, Section 103(a) of the US Copyright Act: 'The subject matter of copyright as specified by section 102 includes compilations and derivative works, but protection for a work employing pre-existing material in which copyright subsists does not extend to any part of the work in which such material has been used unlawfully.'

4 - For the discussion of limitations regarding the usage of works licensed under CC or GPL licences see (Samuelson, 2003).

5 - To some extent, the report tracks also use of some works from the second category; for instance, before 1976 creative works had to be registered for copyright protection in the U.S. Lack of meeting legal requirements related to copyright registration made them part of public domain.

The scope of the present study does not comprise situations in which some uses may be allowed based on, for example, copyright exceptions or the voluntary decision of the author to relinquish the work into the public domain (where the copyright law of the respective State permits it). Such uses of content protected by copyright are subject to many limitations, and their inclusion to the project scope would add an additional layer of complexity. As rightly stated by Erickson et al. (2015) *‘the wider the definition, and the more it focuses on specific legally privileged or tolerated acts, the more difficult it becomes to determine whether a given usage is permitted in every case’*.

There are two possible ways in which a work that is part of the public domain may be used. It can be reproduced or made available in its original form (non-derivative use), or it can be enriched by the follow-on artist who re-uses it creating new work (derivative use). This study focuses on the derivative use of works already in the public domain by the film industry. It investigates the usage of public domain works as bases for screenplays, leaving aside other potential forms of enriching new film productions by works that are part of the public domain, for example, by enhancing a film with public domain music.

## 2.3 ECONOMIC RATIONALES BEHIND THE USE OF PUBLIC DOMAIN CONTENT AND OF ADAPTIONS (LITERATURE REVIEW)

### 2.3.1 The value of the public domain according to economic theory

#### 2.3.1.1 Economic rationales of copyright

According to economic theory, copyright protection increases incentives for creation. It allows a creator and all entities involved in the production and dissemination of creative works to recover their costs; however, a high price for copies of the work is presumed to decrease the accessibility of the latter. The challenge for copyright legislation is thus to strike a fair balance between incentives and access (Landes & Posner 1989; Liebowitz 2009; Waldfogel, 2013). The ideal level of copyright protection would maximise the benefits of creating additional works, and at the same time minimise both the losses entailed by limited access and the costs of administering copyright protection (Landes & Posner, 1989). The end result should be a rich repository of creative works that follow-on artists should be able to use in the continuous process of cumulative and incremental creativity.

It is necessary to emphasise that the final product of the derivative use of pre-existing content is also subject to copyright protection. Copyright protection is especially important for sectors such as the film industry, where the production of high quality products requires high initial investment and the engagement of dozens of creative workers. The final derivative product deserves its own merit for creativity not directly related to the adapted material. The marginal

cost of producing additional copy of the final film is almost negligible in comparison with the overall film production costs. Without proper copyright protection entities involved in film production would be hardly able to obtain proper remuneration for their creative contribution.

#### 2.3.1.2 Benefits associated with the public domain status of works

The public domain status of a work presumably enhances use thereof. As the author or his or her legal successors do not hold exclusive economic rights over the work, the latter can be distributed freely, made available to the public or copied at a very low cost. The increased use of works positively affects education and culture, and provides knowledge for society (Dusollier, 2011). Moreover, the public domain is considered to have a democratic function, as free access to works and their dissemination enhances social and political discourse (De Rosnay & De Martin, 2012).

Economic literature cites other presumed advantages of the public domain status of a work. With the passing of time it becomes harder to keep track of copyright holders, as the economic rights pass to the author's heirs. The tracing and transaction costs related to obtaining the necessary licence can be even prohibitive in some cases (Landes & Posner, 2003). Thus the public domain status of a work may also reduce administrative costs for follow-on creators and publishers.

All these arguments indicate that public domain status may increase the availability and accessibility of the work for the general public both for non-derivative as well as for derivative use. However it is worth remembering that public domain status opens up the possibility of derivative use of the expressions of ideas as they are exposed in the original work. Ideas themselves are, as a principle, not protected by copyright. They are, therefore, open for derivative use by follow-on creators from the very date of publication of the original work, even during the period of copyright protection.

#### 2.3.1.3 Risks associated with the use of public domain works

Economic theory has also suggested that the change of copyright status of a work may trigger some negative consequences. According to this line of reasoning, the loss of copyright protection can result in the dilution of the commercial value of works, a process described in the economic literature as a *tragedy of commons* (Hardin, 1968).

Works in the public domain may be exploited repeatedly until the point when the market is saturated and they lose their public appeal; the consequence is the diminishing of their economic and cultural value. The threat of loss of value of public domain works can also lie in their possible misuse. Inappropriate use of culturally valuable works for bad quality derivative projects can influence the public's judgement of the quality of the work itself (Buccafusco & Heald, 2013). An

audience that sees a poor quality film adaptation of a book may not be motivated to read the original book. Similarly, characters that were used in a degrading manner in an adult film will probably remain associated with the literary work in the minds of those who have seen it<sup>6</sup>.

At the same time, some scholars argue that the lack of clearly defined property rights in relation to works in the public domain may contribute to the under-use or even disappearance of a work from the market. Incentive mechanisms similar to those for creation may be also important for the maintenance of works. With new recording technologies it may for instance be necessary to transfer original works into new formats to maintain their quality (Landes & Posner, 2003). As this argument goes, the situation where everybody is free to publish a work, and marginal prices tend to equal the marginal cost of producing an additional copy of work, there is no incentive to bear additional costs related to a work's preservation. According to this line of thought, the works might disappear from the market or be under-exploited once the copyright has expired, and it may be impossible to revive them again<sup>7</sup>. This argumentation has been shared by the Supreme Court of the United States in the *Eldred v Ashcroft* ruling<sup>8</sup>. Khan (2004) has demonstrated that it is not only a theoretical concern: before 1891, when US laws did not grant foreign authors copyright protection in the US, fierce competition between the publishers drove the books prices to the marginal cost. As a result, high initial fixed investments related to the introduction of the book into the American market could often not be recovered.

There are also theoretical arguments indicating possible under-exploitation of public domain works for derivative purposes. The creation of a derivative work may alter the expected value of other economic agents' projects related to the derivative usage of the same pre-existing work (Liebowitz & Margolis, 2005). Lack of exclusivity may discourage follow-on artists from adapting a pre-existing work, especially in the case of undertakings requiring substantial financial and other resources. According to this reasoning, without the possibility to prevent competitors from making derivative use of the same work, no rational entity would be interested in making the investment necessary to prepare its own adaptation (Liebowitz & Margolis, 2005). As a result, potential new adaptations of old masterpieces may never be produced even though there is strong public demand and important social value that may result from such adaptations.

6 - However, at least the second mentioned situation could be avoided by granting longer or even perpetual moral rights to the author, which could prevent anyone from unauthorised use of a work in a degrading manner.

While the scope of moral rights protection granted to authors varies from one country to another, Article 6bis of the Berne Convention lays down minimum standards. It provides that '[I]ndependently of the author's economic rights, and even after the transfer of the said rights, the author shall have the right to claim authorship of the work and to object to any distortion, mutilation or other modification of, or other derogatory action in relation to, the said work, which would be prejudicial to his honor or reputation.' Note that in France, where moral rights protection is traditionally considered as strong, the Supreme Court held that the moral rights in a work that had fallen in the public domain could not be invoked to stop the publication of a sequel of the work *Les Misérables*.

The court stressed the second author's freedom of creation, as enshrined in Article 10 of the European Convention of Human Rights. See judgment of the Court of Cassation of 30 January 2007 (first civil chamber) *Les Misérables*, JCP 2007 I 179 No 9.

7 - Dusollier (2011) envisaged the possibility to use a *domaine public payant* to fund the preservation of the public domain works.

8 - *Eldred v Ashcroft* 537 U.S. 186 (2003).



Liebowitz & Margolis (2005) compared firms engaged in the production of derivative works based on works already in the public domain to fishermen on an open access lake, who produce at their own optima, not taking into account the induced effects their decisions may have on other producers. A work's ownership, as under copyright, can help manage complex interactions between different economic agents engaged in the production of derivative works, and secure the profitability of such endeavours.

Other scholars question, however, the possibility of the depletion of derivative utility of the underlying works, as creative goods are characterised by *infinite variety* (Caves, 2000). Each derivative version of the same original material may add substantial novel features that may be interesting for an audience.

#### 2.3.1.4 Empirical research on the public domain

So far, economic research related to the public domain has concentrated mainly on non-derivative use of public domain content.

In a series of studies comparing works published between 1913 and 1932 but with a different copyright protection status, Paul Heald rejected the under-exploitation hypothesis. According to his findings, the copyright status of books actually correlates highly with the absence of a printed edition available on *Amazon.com*, which suggests that the under-exploitation argument is unfounded (Heald, 2013). In the category of best-selling fiction published in the USA between 1913 and 1932, books in the public domain were in print at a higher rate and had more editions available by different publishers. Moreover, bestsellers still protected by copyright were available at higher prices in comparison to their public domain counterparts (Heald, 2007).

Finally, both the under- and the over-exploitation hypotheses were rejected in a study on the use of musical compositions in the cinema, showing that songs in the public domain are just as likely to be used in cinematographic works as their counterparts protected by copyright (Heald, 2009).

Pollock et al. (2010) compiled rich statistics on the usage of public domain materials across different submarkets. Apart from the main dataset they were working with — comprising book market and CD music data — they compiled statistics on library loans in Ireland and Slovakia, usage of public domain music by broadcasters in Finland and France and theatre productions in Italy. Depending on the analysed submarket, the proportion of public domain material ranged from under 1 % to as high as 25 %; however, according to the authors, the reliable estimate of public domain usage is between 2 and 10 % (Pollock et al. 2010).

Due to data limitations, Pollock's research team was able to estimate the net value of the public domain only for the book market. The net value of the public domain has been defined as the social value (welfare) generated by a work in the public domain minus its value when under

copyright. Authors estimated that between 6 % and 11 %<sup>9</sup> of the book titles sold in 2007 in the UK represented works that were already in the public domain. Furthermore, a work in the public domain was on average 5–15 % cheaper than a work under copyright. In accordance with the authors' calculations, the net value of the public domain represented 1–2 % of current revenues of works in the public domain, which was equal to 0.1–0.2 % of revenues of all cultural works together (Pollock et al. 2010). This research was limited to an assessment of the value stemming from greater access to public domain works. The derivative value of works in the public domain, which the authors call 'greater reuse' of the works, is not covered by their calculations.

In a project commissioned by the United Kingdom Intellectual Property Office (UK IPO), Erickson et al. (2015) focused on savings that the Wikipedia page creators could generate through the use of public domain photographs; that is to say, photographs they could use without having to obtain licences from the copyright holder. Erickson and his colleagues were able to demonstrate that the inclusion of an image on Wikipedia attracts more user traffic, and that by using public domain images the Wikipedia web page creators benefit from this availability in terms of cost savings. Their rough estimation showed that the net savings from public domain photograph usage can range between USD 208 million to USD 232 million per year. The equivalent commercial value of increased traffic on Wikipedia due to the presence of public domain images was estimated by researchers to be close to USD 34 million per year.

There is even less evidence of the derivative usage of public domain works. Buccafusco & Heald (2013) analysed the adaptation of public domain books into audiobooks. The main focus of this research was set on the availability and price differences between audiobooks based on works already in the public domain and those still under copyright protection. Buccafusco and Heald's analysis showed that the public domain status of a work increases the likelihood of its derivative use in the form of audiobooks. Within the sample of audiobooks analysed by authors, books in the public domain were twice as likely to be available in audiobook format. Among the most noteworthy bestselling works with enduring popularity, public domain titles were 20 % more likely to be used for audiobooks. As to bestselling novels, public domain status also entailed a decrease in the price of audiobooks in comparison to books still under copyright protection controlling for their quality. Buccafusco & Heald (2013) take all these facts as empirical evidence that the risks of underuse, overuse or value depletion of works in the public domain are unsupported by data, at least in the audiobook market.

A recent study of the UK IPO examined the performance of a sample of 1 993 new projects in the categories of publishing, video games, theatre and comics on the platform *Kickstarter*<sup>10</sup>.

9 - An exact estimation depends on the definition of a public domain work. Larger estimates include, for instance, translations of public domain works.

10 - Kickstarter is a platform allowing young creators to collect funds from the public to start new creative projects. A creator chooses a deadline and a minimum sum to be collected. The operation is successful if the sum is collected within the time limit. Kickstarter is available at: [www.kickstarter.com](http://www.kickstarter.com)

Out of these 1 993 projects, 83 % were based on original content, 11 % on pre-existing content protected by copyright and 6 % on pre-existing content in the public domain. The findings suggested that both projects based on licensed material and on public domain content had higher chances of being financed by Kickstarter users than projects based on original content (Erickson et al. 2015). According to the authors of the study, references to previously existing content helped funders assess the quality and prospects of the projects better. However, as the highest likelihood of success for public domain works was observed in categories of projects that required more transformative use of the underlying content than just mere re-publishing of the work, own contribution and creativity demonstrated in the adaptation projects also played an important role.

In the study, public domain-based projects were found to raise more funds than those based on licensed third-party works; they thus appeared to be more attractive to consumers. The higher attractiveness of public domain-based projects may be related to lower costs as there is no need to pay for the licence, or because the public domain works had pre-existing audience support. The authors further suggested that both copyright and a public domain status of the underlying work may contribute to reducing information asymmetry, helping creators and investors set an adequate price (Erickson et al. 2015).

### **2.3.2 The value of adaptations for the film industry: a strategy of reducing risks**

The film industry is a multi-billion dollar business with a big economic and cultural impact. It is characterised by a unique combination of prototypical production, high sunk costs of development, high unit costs of production, high costs of marketing, a huge rate of failure, a short shelf life in the primary marketplace and a lack of price differentiation (Finney, 2014). Although many of these features are shared with other creative industries (Caves, 2000; Hesmondhalgh, 2007) their combination and intensity make the film industry particularly hit-dependent and risky.

A lot of research has been conducted on the factors that could help mitigate these risks and enhance the prospects of new cinematographic undertakings (Escoffier & McKelvey, 2015; Kim, 2013; Hadida, 2009; Lampel & Shamsie, 2000; Joshi & Mao, 2012). Producers may use sophisticated strategies backed by intensive marketing, but in the end a film's fate is decided by its audience. Films are quintessentially experience products: the viewer is not able to fully assess the film before having watched it (Ulin, 2013). The exchange of information about a film between a large number of actual and potential viewers starts a complex stochastic dynamics that in fact is hardly predictable (De Vany & Walls, 1999). This volatility may be exacerbated by the fact that often cultural preferences are used by people to demonstrate their individualism (Hesmondhalgh, 2007). The recipe for success of a film remains a black box, which confirms

what the screenwriter William Goldman said in 1983, that in Hollywood ‘*nobody knows anything*’ when it comes to predicting films’ prospective success at the box office<sup>11</sup>.

Industry insiders acknowledge that a good storyline is the foundational aspect of any successful film production (Eliashberg et al. 2007). As acknowledged by one Hollywood Studio executive, his company receives 10 000 screenplay pitches annually, out of which 70 to 100 make it to development phase and 12 are transformed into films (Caves, 2000). Thus it is very difficult to choose among such a large number of pitches the storyline that would guarantee a break-even, let alone achieve a blockbuster status. The adaptation of best-selling pre-existing creative content has been mostly overlooked in academic research (Joshi & Mao, 2012); yet, it may be an attractive strategy for the limitation of uncertainties inherent to the film industry.

Inferences regarding the potential effectiveness of adaptation strategy are based on the theory of brand extension. This strategy is a marketing tool commonly used by manufacturers in order to reduce the cost and uncertainties related with the introduction of new products. Its success is based on leveraging strong brand recognition and image to enter new markets (Aaker & Keller, 1990). In fact, the film industry often uses brand extension strategies similar to those of consumer packaged goods manufacturers (Sood & Drze, 2006). This strategy has been used by the film industry from the very beginning. For instance, the first film in history to gross USD 100 million was an adaptation of public domain content: *Snow White and the Seven Dwarfs*, a film released by Disney in 1937 (Epstein, 2012).

There are more reasons for the increased popularity of adaptation strategies. As noted by Jenkins (2006), transmedia storytelling is a new trend in the entertainment industry. Transmedia storytelling was defined by Jenkins as a process whereby ‘*a transmedia story unfolds across multiple platforms, with each new text making a distinctive and valuable contribution to the whole. In the ideal form of transmedia storytelling, each medium does what it does the best*’ (Jenkins, 2006). Different audiences could be targeted through different media; they may thus be able to participate in cultural narratives through the media best suited to their tastes and preferences.

There are also personal and political motivations behind film adaptations. Adapters not only interpret a work, but often expose their personal views parting from the adapted text. Adapted text is often a starting point from which contemporary social and political issues are being discussed (Hutcheon, 2012).

Works in the public domain, besides the works that are still under copyright protection, can be an important source of inspiration for film-makers. However, as already discussed above, there are potential advantages and disadvantages related to the usage of public domain content.

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11 - *Silver-screen playbook. How to make a hit film*, The Economist, 27 February 2016.

One of the biggest advantages of the public domain may be to lower the cost of film production as there are creative advantages conferred without the associated need to pay licence fees or seek out rights holders<sup>12</sup>. As documented by Erickson et al. (2015), this criterion has been often mentioned by entrepreneurs from other sectors when interviewed about the motives of public domain usage in commercial projects undertaken by creative SMEs in the UK. Additional motives, also mentioned by those entrepreneurs serving an existing fan community, include the existence of a large and knowledgeable public as well as adding to the repository of fan related materials (Erickson et al. 2015).

Clearing the copyright status, especially in the case of worldwide distribution where the legal status may differ between countries, was cited by companies interviewed by Erickson et al. (2015) as a major additional disadvantage that can also be relevant for film producers.

Another advantage of working with public domain material is creative autonomy. Neither screenwriters nor directors have to negotiate their artistic choices with the copyright owner.

The decision to engage in a project involving public domain content may, however, prove very risky to established studios, as they cannot guarantee exclusivity of the usage of content. The same content could be used by any other market player, who could jump aboard the marketing expenditure bandwagon of other film producers. In one of the first handbooks on the craft of screenwriting, Frances Taylor Patterson warned prospective screenwriters not to adapt public domain content, as production companies were very unlikely to make a film if they knew that any competitor may use the same content as a base of its competitive project (Decherney, 2012)<sup>13</sup>. Also, whereas a fan may be additionally incentivised to see the adaptation of his or her preferred book on the big screen knowing that it is probably the only adaptation of the book protected by copyright in years to come, the same person may not be equally motivated to see another adaptation of the preferred work that is already in the public domain knowing that in few years he or she may have a chance to see another production based on the same content and made by another producer.

## 2.4 HYPOTHESES AND QUESTIONS FOR THE EMPIRICAL RESEARCH

Theoretical arguments indicate that, depending on the circumstances, different scenarios are possible following a change of protection status of a work. Many questions and hypotheses posed in economic literature on the public domain were difficult to answer due to the lack of

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12 - However, it is necessary to emphasise that although the existing work may be already in the public domain and no fees have to be paid for its usage, a film producer may have to pay licence fees for protected material related to the public domain work, such as translations, critical notes, etc.

13 - Despite this advice, in 1915 two high-budget, competitive adaptations of Carmen were released in US cinemas on exactly the same day (McCaffrey & Jacobs, 1999).

data. Thanks to the novel dataset built by the EUIPO team, the present study attempts to bridge some gaps in our understanding of the scale, rationale and consequences of the derivative use of public domain content in the film market, which constitutes an important part of the contemporary creative sector.

Empirical investigations will start with an **assessment of the uptake of public domain content within the film industry**. The proportion of adaptations in the overall sample of films produced between 2000 and 2010 and subsequently released in the EU market will be estimated. An important angle of this analysis is the breakdown of adaptations into those that are based on content still under copyright protection and those that are adapting public domain works. In the assessment of the uptake of public domain content it is important to look not only at the number of film projects as such, but also at the **reception of the films by the public**. Thanks to the statistics on attendance at European cinemas compiled by the European Audiovisual Observatory, the analysis will also compare the cinema attendance of films based on original content, on works still under copyright protection, and on works in the public domain.

The data gathered for the project allows for the empirical testing of some hypotheses developed in previous research. Specifically, the possible **under- or over-utilisation of public domain content for derivative film projects** will be discussed in the light of new data. A comparison of the utilisation of works under copyright protection and in the public domain will facilitate the answer as to whether there are important differences in the rate of exploitation of works based on their protection status. Analyses based on the **comparison of film budgets** and the **characteristics of the film producers using public domain content** for their film adaptations will help answer the question as to whether the public domain status discourages producers from investing substantial sums of money to adapt public domain content.

As discussed in Section 2.3.2, some scholars argue that **adaptation** can be seen **as a potentially effective strategy to reduce risk** in the highly competitive and uncertain film market. If this hypothesis is true, *ceteris paribus* film success should be related to its adaptation status controlling for other relevant factors.

Public domain content that is adapted into films consists of works of universal importance, recognised all over the world, as well as works that are very much embedded in local history and culture. Local film producers may be better suited to properly understand and transform such national literary topoi for cinematographic works creating film adaptations appealing to the local audience. Thus, film adaptations of locally appreciated but not universally known public domain works may be an especially attractive strategy for local film producers to compete with foreign film producers for the attention of local audiences.



Due to the data limitations, film success measured in the present study is limited to cinema attendance in Europe and box office data; yet, hypotheses will be checked taking into consideration other important factors contributing to the success of the film.

Previous economic papers indicated that two factors are important as predictors of the success of an adaptation: the popularity of the adapted work, and the time that has passed since its publication (Joshi & Mao, 2012). In the context of the public domain, the latter factor plays against the selection of public domain content. It is, therefore, important to check what are the **characteristics of public domain works being adapted** by the film industry, what are the most adapted works and the most adapted authors, and how does their popularity compare with the popularity of adapted works that are still under copyright protection.

Data gathered by the project team allows for analysis of the **typical temporal patterns of adaptation of existing content** by the film industry. This enables an empirical check of the hypothesis that there is a strong link between the time span of first publication to the probability of adaptation.

Randomised experimentation is the golden standard in economic research, but data from such experiments are rarely available for the researcher. In the real world, the analyst has to rely on the available observational data with all its limitations and constraints. Such limitations also affect the data gathered for the present project and are further discussed in Chapter 4. Due to those constraints analysis is limited to the film sector. The nature of the data also does not allow for the formulation of definitive answers as regards the current regime of copyright protection and the possible consequences of changes to it. However, we believe that the present study will be a valuable contribution to existing literature, and will help understand the importance of public domain works for follow-on creativity better.

## 3 ADAPTATION OF PRE-EXISTING WORKS: COPYRIGHT<sup>14</sup> ASPECTS

DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS

From a legal perspective, the selection of films for the dataset entailed two important challenges. First, the films considered had to be adaptations of an existing creative work. The dataset mainly relies on the classification of a film as an adaptation by users of the IMDb database. However, there is no unified definition of what exactly constitutes an ‘adaptation’ in terms of copyright law. The jurisdictions concerned by the study may thus understand and define the notion in different ways. Second, the public domain status of the pre-existing (literary) work had to be determined. To that end, the rules applicable for the calculation of the term of protection of the latter had to be identified.

### 3.1 THE SUPRANATIONAL COPYRIGHT FRAMEWORK

At EU level, a number of directives have approximated the national copyright laws to a certain degree<sup>15</sup>. However, there is no single EU copyright title, and copyright law remains territorial in nature. This means that within the European Union, 28 copyright laws coexist.

Directive 2001/29/EC<sup>16</sup> (the ‘Information Society Directive’) harmonises, among other things, the main exclusive economic rights of reproduction, communication to the public/making available, and distribution<sup>17</sup>. However, the Information Society Directive remains silent when it comes to the right of authors to create translations or adaptations of their works<sup>18</sup>.

14 - It should be noted that most continental European civil law jurisdictions do not use the term ‘copyright’, but speak of ‘author’s rights’ and ‘neighbouring rights’ instead. ‘Copyright’ usually refers to the systems adopted in common law jurisdictions such as the United Kingdom, Ireland or the United States. While supranational copyright rules and principles have brought the traditions closer together, differences between the underlying approaches as well as regarding specific features of the two systems remain. In the present study, the term ‘copyright’ is used indistinctively.

15 - Currently, a total of ten directives that mainly address specific aspects of copyright law, as interpreted by an important body of case-law of the Court of Justice of the European Union (CJEU), form the ‘EU acquis’ of copyright. Several aspects, as for instance moral rights or copyright contracts, have remained outside the scope of the EU acquis. Moreover, directives leave the Member States some discretion as to how to implement the directive’s provisions into their laws; the exact scope of certain rights and limitations, as well as the criteria of application of certain rules and principles may thus diverge between different jurisdictions, even where harmonisation has taken place.

16 - Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society, OJ L 167, 22.6.2001, p. 10-19.

17 - Articles 2, 3 and 4 of the Information Society Directive.

18 - It has been argued that in the future, the CJEU may reach the conclusion that the right to create adaptations is included in the right to reproduction, which has largely been harmonised by the Information Society Directive. Therefore the CJEU might in the future provide a definition of an adaptation. For some scholars, this follows from the CJEU’s decision in Case C 5/08, Infopaq International [2009]. In their view, the Infopaq decision implies that an altered version of a copyright work reproduces elements of an author’s own intellectual creation (Stamatoudi & Torremans, 2014).

Directive 2006/116/EC<sup>19</sup> (the 'Term Directive') is particularly relevant to the present study. According to the general principle enshrined in the Term Directive, the Member States of the EU grant copyright protection to works during the life of the author and for 70 years after his or her death<sup>20</sup>.

It should be noted that the directives are also binding for states of the European Economic Area<sup>21</sup>. Therefore, wherever this study refers to the EU Member States in connection with the directives, it is meant to refer also to Norway, Iceland and Liechtenstein.

States started developing supranational standards for copyright protection long before the adoption of EU directives, by means of international copyright treaties or agreements<sup>22</sup>. A crucial instrument in the field of copyright is the 1886 Berne Convention for the Protection of Literary and Artistic Works<sup>23</sup>. The Berne Convention (BC) ensures that the works of authors who are nationals of any of the 183 contracting parties<sup>24</sup> will be afforded appropriate copyright protection in the territory of any other contracting party. To that end, it lays down some basic principles and minimum standards of protection. Notably, according to the so-called principle of national treatment, works originating in the Berne territory are afforded the same level of protection in each of the other contracting states as the respective State grants to works of its own nationals<sup>25</sup>. Next, according to the principle of 'automatic protection', copyright protection must not be conditional upon compliance with any formality<sup>26</sup>. Furthermore, the principle of 'independence of protection' demands that protection be independent of the existence of protection in the country of origin<sup>27</sup>. In addition, the Berne Convention sets minimum standards regarding a number of exclusive rights, including the right of the author to authorise adaptations, arrangements and other alterations of his or her work<sup>28</sup>, and the right to use it as a basis for an audiovisual work<sup>29</sup>. According to the Berne Convention, the general minimum term of protection of works is the life of the author and 50 years after his or her death ('post mortem auctoris' or 'pma')<sup>30</sup>. Technically, the Berne Convention is only concerned with the protection of foreign authors<sup>31</sup>.

19 - Directive 2006/116/EC of the European Parliament and of the Council of 12 December 2006 on the term of protection of copyright and certain related rights (codified version), OJ L 372, 27.12.2006, p. 12-18.

20 - Article 1(1) of the Term Directive; details and exceptions are discussed below.

21 - Agreement on the European Economic Area of 17 March 1993 (as amended on 11 April 2014), Annex XVII.

22 - Initially, the States concluded bilateral treaties that were based on the principle of material reciprocity (Drier & Hugenholtz, 2016).

23 - Berne Convention for the Protection of Literary and Artistic Works of 9 September 1886 (as amended on 28 September 1979).

24 - The total number refers to the total number of parties that acceded to the Paris Act of 1971. The list of the countries can be found on the website of the World Intellectual Property Organization (WIPO): [http://www.wipo.int/treaties/en/ActResults.jsp?act\\_id=26](http://www.wipo.int/treaties/en/ActResults.jsp?act_id=26) (last accessed in July 2016).

25 - Article 5(1) of the Berne Convention.

26 - Article 5(2) of the Berne Convention.

27 - Article 5(2) of the Berne Convention.

28 - Article 12 of the Berne Convention.

29 - Article 14(1) of the Berne Convention.

30 - Article 7(1) of the Berne Convention.

31 - According to Article 3 BC, the general rule is that the nationality of the author is the decisive criterion as to whether the Berne Convention is applicable; Article 3 includes authors who are not nationals of any BC state, but who have their habitual residence in a Berne country; authors who do not fulfil any of these two criteria will be granted protection for those of their works that have been first published in a BC State, or simultaneously in a country outside and in a country inside the Berne Union. See (Drier & Hugenholtz, 2016), p. 23.

Protection in the country of origin remains a matter of national law<sup>32</sup>. However, a desired effect of the minimum standards was that Member States would grant the same level of protection to their own nationals (Drier & Hugenholtz, 2016).

In 1994, members of the World Trade Organization (WTO) adopted the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) as Annex 1C of the WTO Agreement. All the TRIPS members, including the European Union and its Member States, are bound by the TRIPS Agreement<sup>33</sup>. The TRIPS Agreement reaffirms, reinforces and adds to the minimum standards and principles established by the Berne Convention; notably, it provides that WTO members ‘shall comply with Articles 1 through 21 of the Berne Convention (1971) and the Appendix thereto’<sup>34</sup>. Consequently, the minimum standards relating to adaptations and the term of protection are binding for all the EU Member States as well as for the EU itself<sup>35</sup>.

## 3.2 THE NOTION OF ADAPTATION

The present study is based on data of films released in the European Union between the years 2000 and 2010, and which can be described as cinematographic adaptations based on existing creative works. It was of crucial importance to define at an early stage which of the films in the dataset would qualify as adaptations in terms of the applicable copyright law.

As mentioned above, the EU directives do not contain any general provision concerning the right of adaptation in relation to literary and artistic works; consequently, it is left to the Member States to define and interpret the notion of adaptation. Nevertheless, the Berne Convention may provide some guidance.

### 3.2.1 Guidance from the Berne Convention

The Berne Convention explicitly recognises the right to authorise adaptations, arrangements or alterations of a work<sup>36</sup>, but it does not give any definitions of these concepts. According to the WIPO Guide to the Berne Convention, this right supposes the combination of pre-existing elements of the works concerned. These elements will be used in a way that may be regarded as a reproduction, with new creative expression being added to it; as a result, a new work — in this case an adaptation emerges (WIPO, 2003). It is implied that the national authorities of the contracting parties would provide a more detailed interpretation of the concepts mentioned in Article 12.

32 - See Article 5(3) of the Berne Convention.

33 - (Drier & Hugenholtz, 2016), p. 221.

34 - Article 9(1) of the TRIPS Agreement. This was confirmed by the WIPO Copyright Treaty signed in Geneva, Switzerland on 20 December 1996 (WCT), a special agreement under the Berne Convention.

35 - Article 9(2) of the TRIPS Agreement, however, stresses that copyright protection ‘shall extend to expressions and not to ideas, procedures, methods of operation or mathematical concepts as such.’

36 - Article 12 of the Berne Convention, see above.

Doctrine suggests that common principles may be derived from this interpretation. It has been held that the term ‘adaptation’ covers cases of rewriting or remodelling of a work into another form, for example novelisation or dramatisation. ‘Arrangement’ is usually understood as the transformation of a work to suit another purpose, especially musical arrangements or arrangements of works in order to be broadcast on radio or television. ‘Other alterations’ is a residual category that covers all the remaining works based on another original work, which do not fit into one of the previous categories (Ricketson & Ginsburg, 2006).

Apart from these general provisions, the Berne Convention specifically mentions the exclusive right of the author to authorise *cinematographic adaptations* of their literary and artistic works<sup>37</sup>. The ‘cinematographic work’ within the meaning of the Berne Convention is a work expressed by a process analogous to cinematography. In the context of the present study, the term ‘cinematographic work’ appears more accurate than the term ‘audiovisual work’. This expression, in certain specific cases, is not precise as exclusively ‘visual’ works — without any ‘audio’ elements — are also regarded as covered by this category (WIPO, 2003).

The dataset compiled for the purposes of the project consists without any doubt of cinematographic works. The problematic issue was rather to determine what amount of use of the underlying work was necessary to draw the conclusion that the film is a cinematographic adaptation. As the supranational framework of copyright law does not provide a unified definition of an (cinematographic) adaptation, it was necessary to consult the national law and legal doctrine of different jurisdictions in order to be able to assess which films in the dataset would qualify as such.

### 3.2.2 ‘Adaptations’ in the laws of the EU Member States (France, Germany, the United Kingdom)

While the right to adaptation has not been harmonised at EU level, all Member States grant protection to rights holders relating to works based on pre-existing ones. Rights will either be granted directly by means of a specific right to adaptation, or indirectly, as derived from the right to reproduction<sup>38</sup>. Selected national court decisions may serve as examples for the different (or rather converging) approaches adopted across the EU as to the conditions under which a work may be considered an ‘adaptation’.

In French copyright law, the right to adaptation is derived from the right to reproduction<sup>39</sup>. Therefore, the test of infringement by adaptation (which decides when an adaptation needs

37 - Article 14(1) of the Berne Convention.

38 - (Kamina 2016), p. 258.

39 - See Article L-122-4 of the French IP Code (Code de la propriété intellectuelle): ‘Toute représentation ou reproduction intégrale ou partielle faite sans le consentement de l’auteur ou de ses ayants droit ou ayants cause est illicite. Il en est de même pour la traduction, l’adaptation ou la transformation, l’arrangement ou la reproduction par un art ou un procédé quelconque.’

the author's consent), is in principle the same as the one used in the context of reproductions. The right to authorise reproductions or adaptations is touched upon each time original features of the work are communicated to the public, irrespective of the extent, form or duration of the borrowing or of the media used<sup>40</sup>. According to the French Supreme Court, the expression and composition of the theme of a novel are protected as such original elements. According to the classical test of infringement applicable under French law, assessment should generally be based on resemblances between the original work and the alleged copy; similarities rather than dissimilarities should be taken into account when assessing whether a work infringes the copyright of another author<sup>41</sup>. When it comes to literary works, infringement might occur when the composition, plot or dramatic developments are borrowed<sup>42</sup>. The similarities, however, should go beyond borrowing mere ideas<sup>43</sup> (Kamina, 2016). In the French author's rights system, moral rights protection traditionally plays an important role. Nevertheless, it has been held that while the conclusion of an adaptation contract does not prejudice the original author's right to integrity, the author of a cinematographic adaptation based on a literary work enjoys a degree of freedom<sup>44</sup>.

The German Copyright Act establishes a specific right to adaptation<sup>45</sup>. Adaptations are protected by copyright if they are the personal intellectual creation of the adaptor<sup>46</sup>. In the event that the new work does not meet the threshold of 'originality', it will not be considered an 'adaptation', and the use of the pre-existing work will fall under the scope of the right to reproduction<sup>47</sup>. An adaptation will not only reflect the individuality of its author, but also respect the individuality of the pre-existing work<sup>48</sup>. Adaptations from one artistic form to another (e.g. from a novel to a film) will usually be considered highly worthy of protection<sup>49</sup>. German copyright law offers an interesting approach in its doctrine of free use. According to the German Copyright Act 'an autonomous work, created in free use of a work created by another person, may be published and exploited without authorisation of the author of the used work'<sup>50</sup>. Use is free when the

40 - Judgment of the Court of Cassation (France) of 16 July 1987, Bull. Civ., I, No 225; La Semaine Juridique, 1987, IV, p. 311; RIDA, January 1988, p. 94; see (Kamina, 2016), p. 264.

41 - Judgment of the Court of Cassation (France) of 16 June 1955, Revue Dalloz, 1955, p. 554.

Judgment of the Court of Cassation of 13 April 1988, RIDA, October 1988, p. 297.

Judgment of the Court of Cassation (France) of 4 February 1992, Civ., Revue Dalloz, 1992, p. 182.

However, in some cases the dissimilarities were also taken into account. See the judgment of the Versailles Court of Appeal of 15 December 1993, Revue Dalloz, 1994, p. 132.

42 - Judgment of the Court of Cassation (France) of 27 June 1910, Revue Dalloz Périodique, 1910, I, p. 296.

Judgment of the Tribunal of First Instance of Paris of 16 May 1973, RIDA, October 1974, p. 166.

43 - Judgment of the Court of Cassation of 5 July 2006, civ., RIDA, October 2006, p. 353.

44 - See the judgment of the Court of Cassation of 12 June 2001 (first civil chamber), Légipresse, No 185, III, 180. See (Bruguère, 2016) p. 388.

45 - Section 23 of the Law of 9 September 1965 on copyright and related rights (Federal Law Gazette Part I, p. 1273), with further amendments (Germany) states that adaptations and other rearrangements of a work may only be published or exploited with the authorisation of the author of the pre-existing work; in the event of films based on pre-existing works, consent of the author is already necessary at the stage of production of the film.

46 - Section 3 of the German Copyright Act, notwithstanding copyright protection of the pre-existing original work.

47 - Judgment of the Federal Court of Justice (Germany) of 16 May 2013, in Case I ZR 28/12, *Beuys-Aktion*.

48 - See in this context the judgment of the Federal Court of Justice (Germany) of 19 November 1971, in Case I ZR 31/70, *Biografie: „Ein Spiel“*.

49 - See (Schack, 2015) p. 143.

50 - Section 24 of the German Copyright Act.



features of the new work are dominant, and the pre-existing work is largely secondary to the overall impression or is overshadowed by the new work<sup>51</sup>. This threshold is higher the more original the existing work is, and vice versa<sup>52</sup>. The criteria for assessing whether there is free use are particularly strict when a work aims to take advantage of the success of a pre-existing work<sup>53</sup>. Allusions to characters created by others are permitted, as long as only their names, and not their characterisation or parts of the contents of the previous work are used<sup>54</sup> (Schack, 2015).

The UK Copyright Act provides rights holders with a right against ‘infringement by making adaptation or act done in relation to adaptation’ in relation to literary or dramatic works<sup>55</sup>. The text suggests that the line between infringement by reproduction and by adaptation is not always easy to draw<sup>56</sup>. United Kingdom courts have held that for a work to be considered an infringing adaptation it is necessary for the complainant to show a causal connection between the original work and the allegedly infringing work. The character of the causal connection, according to *Francis Day and Hunter v Bron*, must be of ‘a sufficient objective similarity between the infringing work and the copyright work, or a substantial part thereof’ (McDonagh, 2012). In *Ladbroke v William Hill*<sup>57</sup>, the court stated that the issue of what amounts to a ‘substantial part’ does not depend on a quantitative test, but rather on a qualitative one. The claimant thus cannot choose random parts of his work in order to make the result be more likely in his favour, but the work should be assessed in its entirety. In cases involving musical works the courts held that note-for-note examination should not serve as a means of assessment of similarity of the works concerned, but the decisive element should be ‘how music is heard’<sup>58</sup>, that is to say whether similarity is detectable just by plain listening without any detailed analysis. The systematic approach developed by courts in the United States also appears interesting in the context of the present study.

### 3.2.3 ‘Derivative works’ in the copyright law of the United States of America

The Copyright Act of the United States<sup>59</sup> grants the author the exclusive right to prepare ‘derivative works’<sup>60</sup>. The act itself offers an open enumeration of works that are considered derivative<sup>61</sup>.

51 - Judgment of the Federal Court of Justice (Germany) of 11 March 1993, in Case 1 ZR 263/91, *Alcolix*.

52 - Judgment of the Federal Court of Justice (Germany) of 20 December 2007, in Case 1 ZR 42/05, *TV-total*.

53 - Judgment of the Hamburg District Court of 31 January 2003, in Case 308 O 324/01, *Die Päpstin*.

54 - Judgment of the Federal Court of Justice (Germany) of 15 November 1957, in Case 1 ZR 83/56, *Sherlock Holmes*.

55 - Section 21 of the Copyright, Designs and Patents Act 1988.

56 - See Section 24(5) of the Copyright, Designs and Patents Act 1988: ‘No inference shall be drawn from this section as to what does or does not amount to copying a work.’ See (Kamina, 2016), p. 259.

57 - Judgment of the House of Lords of 18 November 1963, in Case [1964] 1 W.L.R. 273, *Ladbroke (Football) Ltd v William Hill (Football) Ltd*.

58 - Judgment of the Court of Appeal of England and Wales of 20 February 1963, in Case [1963] Chapter 587, *Francis Day and Hunter Ltd. And Another v Bron and Another*.

59 - Copyright Act of 1976, enacted on 19 October 1976 (with further amendments).

60 - Section 106(2) of the US Copyright Act.

61 - Section 101 of the US Copyright Act: ‘A “derivative work” is a work based upon one or more pre-existing works, such as translation, musical arrangement, dramatization, fictionalization, motion picture version, sound recording, art reproduction, abridgment, condensation, or any other form in which a work may be recast, transformed, or adapted. A work consisting of editorial versions, annotations, elaborations, or other modifications, which, as a whole, represent an original work of authorship, is a “derivative work”.’

In order to decide whether a certain work should be considered derivative, the courts of the United States first of all have to establish a link between the underlying and the newly created work by assessing whether they are substantially similar<sup>62</sup>.

The courts have developed a number of tests that facilitate the decision as to whether the amount of use of the underlying work is substantial<sup>63</sup>. These tests, although they differ in some aspects, always answer primarily the question as to whether there has been some amount of use of the underlying work. If so, the following considerations focus on the degree of similarity between the two works concerned, assessing it from the perspective of an 'ordinary observer'. When the court concludes that the use of the underlying work is so subtle that it would not be recognised by an average layman, copying is considered *de minimis*, and the newly created work is considered as wholly original<sup>64</sup> (Osterberg & Osterberg, 2003). After the court concludes that the works concerned are substantially similar, it focuses on the question as to whether a substantial amount of original expression was added to the underlying work in order to distinguish a derivative work from a reproduction (Gervais, 2013). This approach appeared especially interesting in the framework of the present study, which relied upon information provided in a database created by lay users.

This very brief discussion of case-law in some of the jurisdictions concerned by the study shows that courts have developed different approaches in order to assess when a work that draws from pre-existing work(s) should be considered an adaptation. Generally speaking, common principles seem to outweigh differences, at least with a view to the situations the present study is interested in. The dataset being the subject of analysis is only concerned with films based on pre-existing works; that is to say, with works adapted from one artistic form of expression to another one. The films in the dataset are apparently 'original' enough to be protected by copyright; at least in the view of the users of the IMDb database, they are clearly based on pre-existing intellectual creations. Therefore, assuming that these films would probably qualify as adaptations under the respective copyright law appears, in our opinion, justified.

Once established that a film is an adaptation of an underlying literary work, it has to be determined as to whether the pre-existing work is in the public domain. To that end, the exact term of protection has to be calculated.

62 - According to the so-called *de minimis* concept a work is considered a non-infringing original when the degree of similarity between the two works in question is not substantial.

63 - These are the test of 'probative and substantial similarity', the 'extrinsic-intrinsic test' and the 'abstraction-filtration-comparison'. The question as to which of the tests will be used by a particular court depends on the circuit the court belongs to. See (Osterberg & Osterberg, 2003).

64 - See, for example, the judgment of the United States Court of Appeals (Second Circuit) of 13 November 1995, in Case 71 F.3d 996, *Knitwaves, Inc. v Lollytogs Ltd., Inc.*: 'The fact finder decides whether an average lay observer would recognise the alleged copy as having been appropriated from the copyrighted work.' Judgment of the United States Court of Appeals (Ninth Circuit), in Case 794 F.2d 432, 1986, *Fisher v Dees*: 'Copying is considered *de minimis* only if it is so meager and fragmentary that the average audience would not recognize the appropriation.'

### 3.3 THE TERM OF COPYRIGHT PROTECTION

After the expiry of copyright protection, a work falls into the public domain<sup>65</sup>. This change of status is tantamount to the loss of the author's economic rights in relation to his or her work<sup>66</sup>. Anyone may use a work in the public domain, with no need to seek permission (e.g. without the need of obtaining a licence). In accordance with the principle of territoriality, copyright legislation, including provisions on the term of protection, is confined to the territory of a particular state. In theory, the same work could thus be protected in one country, but already be in the public domain in another one. However, international and EU law have approximated national rules on the term of copyright protection.

The Berne Convention has brought about minimum standards for protection, and among others for the term of protection. Yet, countries may envisage longer terms<sup>67</sup>. In addition, some countries became Berne members later than others. The pre-Berne regime might, therefore, have to be considered in certain cases due to transitional provisions that make the old law still relevant.

In the European Union the current principle is that the author is protected during his or her lifetime and 70 years after that. Nevertheless, a number of exceptions have to be taken into account.

#### 3.3.1 The term of protection in the European Union

##### 3.3.1.1 The principle: 70 years pma

Within the European Union, the term of protection has been largely harmonised. Copyright, that is to say the rights of an author in a literary or artistic work within the meaning of Article 2 of the Berne Convention, normally lasts during the author's lifetime and for 70 years pma<sup>68</sup>. For the time being, there is no generally unified notion of authorship in the EU. This may affect the term of protection, for instance where the latter depends on the lifespan of different persons in different countries. At least in continental Europe, the basic principle is that the creator, that is to say the physical person who created the work, is the author and thus the initial rights holder<sup>69</sup>.

65 - It may be noted that a single cultural product may be protected by a layer of various rights (including copyright and related rights). It is important to ascertain that all relevant rights have expired before it can confidently be declared that the reuse of the cultural product does not require rights clearance. In the present study, the issue is less complex since predominantly literary works are considered.

66 - Depending on the law of the relevant country, moral rights in relation to the work may subsist even after the author's death. The term of protection of moral rights has not been harmonised in the EU (see Article 9 of the Term Directive).

67 - See Article 7(6) of the Berne Convention.

68 - Article 1(1) of the Term Directive.

69 - Exceptions to the principle exist: for example, national laws may stipulate that in the case of works created in the course of employment, copyright is vested in a legal entity. In such cases, the term of protection runs for 70 years after the work is lawfully made available to the public. See Article 1(4) of the Term Directive. The provision adds that this applies except if the natural persons who have created the work are identified as such in the versions of the work made available to the public. See Angelopoulos in (Dreier & Hugenholtz, 2016), p. 348 et seq. noting that under UK law, while the employer is the initial copyright holder in a work created in the course of employment, the term of protection is calculated on the basis of the death of the author. See Section 11(2) and Section 12 of the Copyright, Designs and Patents Act 1988.

EU harmonisation goes beyond the minimum standards prescribed by international copyright law. Before the adoption of a unified term of copyright protection, the legislation of the Member States varied. In the majority of the States the duration of copyright was, in conformity with the Berne Convention, 50 years pma. Nevertheless, some States decided to use the possibility to increase the level of protection to 70 years pma<sup>70</sup>. Until 1987, the longest term was afforded to authors in Spain — 80 years pma<sup>71</sup>.

The Term Directive, harmonising the copyright term in the EU, applies to all works that were protected in at least one of the countries of the European Union on 1 July 1995<sup>72</sup>. As a consequence, copyright in the countries the laws of which had set a shorter term of protection was restored<sup>73</sup>. The Term Directive established a unified regime as to when works would fall into the public domain in all the Member States of the European Union. It contains specific provisions on the calculation of the term of protection of anonymous and pseudonymous works, works of joint authorship, collective works and works published in volumes, parts, instalments, issues or episodes<sup>74</sup>.

### 3.3.1.2 Exceptions to the principle relevant to the present study

According to Article 10(1) of the Term Directive, *‘[w]here a term of protection which is longer than the corresponding term provided for by this Directive was already running in a Member State on 1 July 1995, this Directive shall not have the effect of shortening that term of protection in that Member State.’* As a consequence of this requirement of non-retroactive effect of the Directive with regard to longer terms that were already running on 1 July 1995, some works ought to fall into the public domain at a later date<sup>75</sup>. In that vein, a number of exceptions to the principle of 70 years pma were relevant for the calculation of the term of protection of certain works covered by the present study.

#### 3.3.1.2.1 Longer protection under former Spanish copyright law

Until the year 1987 when the new copyright act was introduced, Spanish authors enjoyed copyright protection of 80 years pma. The term was shortened to 60 years pma in that year; however, the authors who died prior to the date of entry into force of the new copyright act

70 - For instance, Germany and Greece (Stamatoudi & Torremans, 2014).

71 - The terms of protection in respect of related rights varied even more.

72 - See Article 10(2) of the Term Directive.

The first directive harmonising the term of protection was adopted in 1993 (Council Directive 93/98/EEC of 29 October 1993 harmonising the term of protection of copyright and certain related rights, OJ L 290, 24.11.1993, p. 9-13). It was codified by the current Term Directive; however the basic term of protection and the scope of application remain unchanged.

73 - Given that more than 20 years have passed since 1995, all revived works are now in the public domain.

74 - Article 1(2)-(5) of the Term Directive.

75 - See Article 10(1) of the Term Directive: *‘Where a term of protection which is longer than the corresponding term provided for by this Directive was already running in a Member State on 1 July 1995, this Directive shall not have the effect of shortening that term of protection in that Member State.’*

were still afforded the 80 years term. Since the Term Directive requires non-shortening of the term of protection already running in a Member State on 1 July 1995, this privilege persisted in the Spanish legal order<sup>76</sup> (Stamatoudi & Torremans, 2014).

Moreover, in accordance with the principle of non-discrimination (Article 18, TFEU), not only Spanish works, but all works originating<sup>77</sup> in the EU territory, and works of other EU nationals enjoy this longer term under Spanish jurisdiction<sup>78</sup>. Therefore, building on the assumption that film producers take into consideration the legislation of the country of production as explained in Chapter 4, the 80 years term has been applied to works originating in the EU, which serve as a basis of the films produced in Spain and that might be relevant in the context of the present study.

### **3.3.1.2.2 Exceptions related to the world wars**

Some of the countries involved in the world wars, namely Belgium, France, Italy and Austria, introduced a copyright term extension for works that were published during one of the wars or works of authors who died in a war. In the majority of cases these wartime extensions for literary works were consumed by the 70-year term introduced by the Term Directive. However, the works of several well-known authors still enjoy longer protection as a result of their creator's participation in the war. Often mentioned are the French authors Antoine de Saint-Exupéry, Guillaume Appollinaire and Charles Péguy, who were granted an additional 30 years of protection under French law due to the fact that they died for France in one of the world wars (Angelopoulos, 2012).

There is only one author in the dataset used for the present study to whom these extensions are applicable — Antoine de Saint-Exupéry, who died for France in the Second World War in 1944. Also, because the work in question was *The Little Prince*, which was published in 1943, another extension applies here, due to the fact that the work was published during the Second World War. Although the exact term of protection has not been set by the French courts yet, it would certainly not be less than 80 years pma and thus the work has been considered to be still copyright-protected<sup>79</sup>.

76- The fourth transitional provision of the Royal Legislative Decree nr 1/1996 of 12 April 1996, approving the revised text of the Law on Intellectual Property, regulating, clarifying and harmonising the existing legislation on the subject, with further amendments.

77 - Origin of a work is determined according to the Berne Convention.

78 - See the judgment of the CJEU of 6 June 2002 in Case C-360/00, *Land Hessen v Ricordi & Co. Bühnen – und Musikverlag GmbH*. See also the judgment of the Supreme Court of Spain of 13 April 2015, in Case 177/2015, *The Royal Literary Fund v Enokia SL*.

79 - The calculation of the term for works of these authors remains unclear. According to the French Court of Cassation the application of the term extensions for literary works that were published during the world wars is excluded due to the application of the Term Directive; however, the question remains unclear when it comes to the exceptions for the authors who died for France. Although this issue has not been resolved by the courts yet, it is sure that the term of protection of their works would most certainly vary between 80 years pma and 94 years and 272 days pma, depending on when the respective work was published (Angelopoulos, 2012).

### 3.3.1.2.3 *Specific rules for posthumously published works*

Some countries used to have special rules for works published posthumously. The works that fall in this category might enjoy a longer term of protection in the countries that had adopted these extensions. This would apply, for example, to Bulgakov's *Master and Margarita*, which was published posthumously in 1966/1967<sup>80</sup>. However, as Bulgakov passed away in 1940, even without taking into account the possible longer term the work would have been protected due to the application of the basic 70-year rule between the years 2000–2010. Similar reasoning would apply also to *The Diary of Anne Frank*<sup>81</sup>.

### 3.3.1.2.4 *The Peter Pan play: perpetual entitlement to 'royalties'*

Another special case is the *Peter Pan* play. Copyright law of the United Kingdom requires royalties for its use to be paid to Great Ormond Street Hospital (GOSH), a children's hospital in London, notwithstanding that the copyright for the work expired on 31 December 2007. However, the right that the hospital currently has is not copyright as such, as it is only entitled to royalties but is not able to prevent anyone else from use of the work<sup>82</sup>.

For simplification, given that the royalties that must be paid to the GOSH have a similar nature to licence fees, in the study the *Peter Pan* play was considered to be still under copyright in the United Kingdom.

### 3.3.1.2.5 *The UK exception for previously unpublished works*

Until 1989, the United Kingdom afforded perpetual copyright protection to unpublished works. With the entry into force of a new copyright law (1 August 1989) these works were granted

80 - The novel was first published in the Russian magazine *Moskva* — the first part in November 1966 and the second part in January 1967. See, for example, the introduction to the 1979 translation of the novel, available online at: <http://www.masterandmargarita.eu/en/02themas/pevear.html> (last accessed 27 October 2016).

81 - There has been debate about the copyright protection of the *Diary*. Although the copyright vested in the manuscripts of Anne Frank should have expired on the 1 January 2016, in some countries the copyright protection of her works will last even longer due to the fact that the original manuscripts were published for the first time in 1986. In addition to that, one version of the *Diary* was compiled and published by her father which gives rise to a question as to whether or not he should be considered one of the authors of this version. If so, given that Otto Frank died in 1980, this work would fall into the public domain in 2051.

See, in this context, for example: Dutch court confirms that the manuscripts of the diary of Anne Frank remain protected in 2016 and beyond. *Anne Frank Fonds* [online] 2015, available at: <http://www.annefrank.ch/234/items/dutch-court-confirms-that-manuscripts-diary-anne-frank-remain-protected-in-2016-and-beyond.html>, (last accessed October 2016), referring to the decision of the District Court of Amsterdam of 23 December 2015, in Case C/13/583257 / HA ZA 15-270.

However, although there were films about Anne Frank in the dataset, none of them turned out to be based directly on *The Diary of a Young Girl*.

82 - *Peter Pan* and the Copyright that Never Grew Up. *Plagiarism Today* [online] 2015, available at: <https://www.plagiarismtoday.com/2015/10/21/peter-pan-and-the-copyright-that-never-grew-up/> (last accessed October 2016).

(a) the date on which copyright expires in accordance with Section 163(3), or

(b) the end of the period of 50 years from the end of the calendar year in which the new copyright provisions come into force, whichever is the later.

protection of 50 years after that date, which means they would fall into the public domain on 1 January 2040. As a consequence, some works may enjoy longer protection than 70 years after the death of their author<sup>83</sup>.

### 3.3.1.2.6 *Different terms of protection in the new EU Member States before their accession*

New Member States of the EU, that is to say those states that acceded to the European Union between the years 2000 and 2010, are bound by the Term Directive as from the date of their accession to the EU<sup>84</sup>. As a result, film adaptations produced in these countries before the date of accession have to be assessed according to the national legislation of the respective country.

With respect to the dataset used in this study, there are only four countries belonging to the new Member States with film adaptations in the project dataset, produced between the year 2000 and the date of their accession — the Czech Republic, Hungary, Poland and Slovakia. As in these countries the Directive was implemented on the 1 October 2000<sup>85</sup>, 1 September 1999<sup>86</sup>, 22 July 2000<sup>87</sup> and 1 January 2004<sup>88</sup> respectively, there was only one case where it was necessary to use the old legislation (a Czech film produced in 2000)<sup>89</sup>.

For the purpose of the study establishment of the exact year in which a work fell into the public domain was necessary for works for which the change happened between the years 1996 and 2014. For the 'old' Member States the general 70-year rule could be used, because the implementation deadline for the Term Directive passed in July 1995. However, in the case of the new Member States this general rule could not be relied upon when the author of the underlying work had passed away between the years 1925 and 1934, and thus in such cases it was again necessary to apply previous national legislation<sup>90</sup>.

83 - Article 41 of the Copyright, Designs and Patents Act 1988 states that '(3) Copyright in unpublished literary, dramatic or musical works continues to subsist until:

84 - More precisely, the day of their accession to the EU is the deadline for implementation of the directive.

85 - Law nr. 121/2000 of 12 May 2000 on copyright, related rights and amending other laws, with further amendments.

86 - BOGSCH, Attila and Alexandra MOLNÁR. *Copyright In Hungary: New Copyright Act – a response to changing times* [online]. Available at: <http://www.bogsch-partners.hu/en/pubs/copyright.html>, [2016-07-08].

87 - Law nr 2000.53.637 of 9 July 2000 amending the law of 4 February 1994, on copyright and related rights, with further amendments.

88 - Law nr 618/2003 of 4 December 2003 on copyright and rights related to copyright, with further amendments.

89 - Until the 1 October 2000, the copyright term according to the Czech legislation was 50 years after the death of the author.

90 - For example, if a writer died in 1928, his works would have fallen into the public domain in 1999 in all the 'old' Member States. If we assumed the same for Slovakia, we would correctly decide that the work was already in the public domain during the years 2000-2010, but we would wrongly conclude that the book fell into the public domain in 1999, because according to the older Czechoslovak legislation it would have fallen into the public domain already in 1979 without any later restoration of copyright.



### 3.3.2 The term of protection in third countries

#### 3.3.2.1 The effects of regional and international harmonisation in third countries

##### 3.3.2.1.1 *General convergence of the terms, a number of exceptions*

When it comes to countries that are not Member States of the European Union (or, more precisely, the EEA), the national legislation of each state has to be examined separately. However, as nowadays almost all countries concerned by the study are contracting parties of the Berne Convention, it can be assumed that the term of protection will be equal to or longer than the standard set by the Convention.

The Convention requires the term of copyright protection in the contracting states to be at least 50 years pma. In the case of joint authorship the term is counted as from the death of the last surviving author<sup>91</sup>.

Some countries have set their copyright term at 70 years pma, in numerous cases as a response to the EU Term Directive. Among the countries that appeared in the dataset, the 70-year rule is currently applied for example in the USA, Russia, Australia and Switzerland. Canada, China and Japan abstained from copyright term extensions, and thus the 50-year rule remains applicable there. The term of protection in India is currently 60 years pma<sup>92</sup>.

Certain special rules and different types of copyright exceptions and extensions must also be taken into account in the context of third countries. With regard to the dataset, the Russian national rule according to which posthumously published works enjoy 70 years of protection after the year of publication was relevant: Bulgakov's *Master and Margarita*, published in 1966, had to be considered a copyright-protected novel<sup>93</sup>.

91 - Article 7bis of the Berne Convention.

Exceptions are possible under the Berne Convention in the case of anonymous and pseudonymous works, where the author cannot be identified (50 years after the work has been lawfully made available to the public), photographic works and works of applied art (25 years from its making) and cinematographic works (50 years after the work has been made available to the public, for unpublished works 50 years after their creation) (Article 7).

92 - A graphical representation of countries and their current copyright terms can be found here:

Duration of copyright protection in the world. European Parliamentary Research Service Blog [online]. 2015, available at: [https://epthinktank.eu/2015/07/02/the-challenges-of-copyright-in-the-eu/copyright\\_fig2/](https://epthinktank.eu/2015/07/02/the-challenges-of-copyright-in-the-eu/copyright_fig2/), [last accessed 7 August 2016].

93 - According to the general rule set by the old legislation of the Soviet Union, and given that Bulgakov died in 1940, this work would have already fallen into the public domain years ago. See, for example: Copyright Law of Russia — History of Domestic Copyright Legislation — Copyright in The Soviet Union [online]. 2016, available at: [http://www.liquisearch.com/copyright\\_law\\_of\\_russia/history\\_of\\_domestic\\_copyright\\_legislation/copyright\\_in\\_the\\_soviet\\_union](http://www.liquisearch.com/copyright_law_of_russia/history_of_domestic_copyright_legislation/copyright_in_the_soviet_union), [2016-07-08]: 'The 1925 Fundamentals had defined that copyrights subsisted for 25 years since the first publication of a work. In 1928, this was changed to the lifetime of the author plus 15 years (15 years pma). The 1961 Fundamentals reduced this to the lifetime of the author, but allowed individual republics to devise their own rules ... the Russian SFSR defined in its Chapter IV of the 1964 RSFSR Civil Code a copyright term of 15 years pma'

### 3.3.2.1.2 *Comparison of terms: Article 7(8) of the Berne Convention*

In principle, the term is to be governed by the legislation of the state where protection is claimed<sup>94</sup>. However, no state should be forced to grant protection to works of foreign origin, while the term of protection thereof in their country of origin has lapsed. Article 7(8) of the Convention lays down the so-called 'rule of the shorter term' or 'comparison of terms', which is an express deviation from the principle of national treatment (Dreier and Hugenholtz, 2016). As a result, the term of protection applied to an individual work is always either the term afforded by the country where the protection is claimed, or the term afforded by the country of origin of the work, whichever is shorter. However, each state can decide to grant its own term of protection to all works with no exceptions if it expressly states so in its national copyright law<sup>95</sup>.

The shorter term rule is not uniformly applied by all the contracting parties of the Convention. The EU Term Directive expressly requires all Member States to abide by the rule as regards foreign works from non-EU authors: according to Article 7(1) of the Term Directive, where the country of origin of a work, within the meaning of the Berne Convention, is a third country, and the author of the work is not an EU national, the term of protection granted by the Member States expires on the date of expiry of the protection granted in the country of origin of the work, but may not exceed the term laid down by the Term Directive.

Some third countries introduced in their laws a provision excluding application of the rule<sup>96</sup>.

### 3.3.2.2 **The complex situation in the United States of America**

The United States represent a specific case when it comes to the term of copyright protection. On the one hand, it has been emphasised that all works published before 1923 are unambiguously in the public domain in the United States<sup>97</sup>. On the other hand, the rules relating to the term of protection have undergone several legislative changes in the past century. Determining the exact term of protection for a specific work is therefore quite challenging. Given that the USA is an important country of film production in the dataset, it deserves a more detailed description.

For works created on or after 1 January 1978 the term of copyright is 70 years pma.

94 - Article 7(8) of the Berne Convention.

95 - Article 7(8) of the Berne Convention.

96 - For example, the USA and Mexico. Canada follows the rule, but does not apply it to the USA and Mexico under the North American Free Trade Agreement (Seiter & Seiter, 2012).

97 - See Challenges of the Digital Era for Film Heritage Institutions, Final Report prepared for the European Commission, DG Information Society and Media, December 2011 (the Digital Agenda for the European Film Heritage/DAEFH Study, available at: [http://ec.europa.eu/archives/information\\_society/avpolicy/docs/library/studies/heritage/final\\_report\\_en.pdf](http://ec.europa.eu/archives/information_society/avpolicy/docs/library/studies/heritage/final_report_en.pdf))

However, in the event of works created before this date it is much more complicated: the determination of the copyright term in the specific case depends on the date and place of first publication of the respective work, and on its compliance with formal requirements laid down by the law at that time.

The first copyright act that is relevant to the present study is the 1909 Copyright Act; it granted the works that were first published in the USA a copyright term of 28 years. After this period, the term could be extended for a second (renewal) term of 28 years by means of registration of the right at the United States Copyright Office.

The 1976 Copyright Act<sup>98</sup> carried over the old system with one major change — the renewal term was prolonged to 47 years, which gave the authors the possibility to increase their copyright term to up to 75 years. Moreover, a set of acts providing interim extensions to the works whose copyright was about to expire before the entry into force of the 1976 Copyright Act had been adopted so that this provision could apply to all works published after 19 September 1906, and be properly renewed with the US Copyright Office.

Finally, the 1998 Copyright Term Extension Act increased the renewal term for another 20 years. Thus the maximum length of copyright protection was extended to 95 years after the publication date. As a result of the amendment to the copyright law from 26 June 1992, the works originally published between 1964 and 1977 obtained the renewal term automatically and thus did not have to be registered in order to get the longer protection term<sup>99</sup>.

The calculation of the copyright term granted to works originating in the USA can be, with a certain degree of simplification, represented by the following table<sup>100</sup>:

98 - In force since 1 January 1978.

99 - Duration of Copyright. *United States Copyright Office* [online] 2011. Available at: <http://www.copyright.gov/circs/circ15a.pdf>, [2016-07-08].

100 - For a more detailed overview, see the chart of Peter B. Hirtle 'Copyright Term and the Public Domain in the United States', available at: <http://copyright.cornell.edu/resources/publicdomain.cfm> (last accessed 17 November 2016).

Table 1: Copyright term in the United States for books first published in the US

First published in the United States		
Date of first publication	Conditions	Copyright term
19 September 1906 → 1922	1. Copyright notice <sup>101</sup> 2. + Renewal	1. 28 years from the date of first publication 2. 75 years from the date of first publication
1923–1963	1. Copyright notice 2. + Renewal	1. 28 years from the date of first publication 2. 95 years from the date of first publication
1964 – 1977	Copyright notice	95 years from the date of first publication
1 January 1978–28 February 1989 →	Copyright notice	70 years post mortem auctoris
1 March 1989 →	No formalities	70 years post mortem auctoris

The case of works that were first published outside of the USA is even more complicated. As the United States only became party to the Berne Convention on 1 March 1989, authors of such works had to rely on bilateral agreements concluded with individual states before that date. Such bilateral agreements regularly required compliance with formalities and reciprocal treatment<sup>102</sup>.

With effect as of 1 March 1989, as a consequence of the accession to the Berne Convention, US copyright law ceased to require that foreign works comply with formalities in order to obtain copyright protection. Furthermore, in 1996, it restored the copyright in works published between 1978 and 1989, which still enjoyed copyright protection in their countries of origin (Ochoa, 2009).

101 - A copyright notice is a notice placed on the protected work, which informs its users of the existing copyright claim of the rights holder.

102 - The first basis for this approach was the 1891 Chace Act according to which a work that was first published outside of the US was eligible for copyright protection under the law of the US if it was a) registered with the US Copyright Office before its first publication, b) published with a copyright notice and c) the country of its first publication had guaranteed reciprocal treatment. The requirement of renewal applied to the works of foreign origin in the same way as it applied to domestic works (Ochoa, 2009).

The conditions are summarised in the following table:

Table 2: Copyright term in the United States for books first published outside of the US

First published outside of the United States		
Date of first publication	Conditions	Copyright term
→ 1977	1. Without compliance with formalities 2. In the public domain in the country of origin on the 1 January 1996	No protection
1923 → 1977	1. Without compliance with formalities 2. Under copyright in the country of origin on the 1 January 1996	95 years from the date of first publication
1923 → 1977	With compliance with all US formalities <sup>103</sup>	95 years from the date of first publication

<sup>103</sup> - These included: copyright notice, registration and deposit of copies in the Copyright Office, manufacture of the work in the US and (to obtain the extension from 28 to 95 years) registration of the renewal.  
See also Peter B. Hirtle, 'Copyright Term and the Public Domain in the United States', available at: <http://copyright.cornell.edu/resources/publicdomain.cfm> (last accessed 17 November 2016).

## 4. PREPARATION OF THE DATA FOR ANALYSIS

DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS

### 4.1 THE DATA SOURCES

#### 4.1.1 Information about films: the Internet Movie Database (IMDb)

According to the information provided on their website, IMDb is the world's most popular and authoritative source for film information. It offers a searchable database of more than 185 million data items including more than 3 million films, as well as TV and entertainment programmes<sup>104</sup>. To be included in IMDb a work has to be of general interest to the public, and should be available to the latter. The general interest of the public is assumed when the film is released in cinemas, shown on TV, released on video or the web, listed in the catalogues of established video retailers, accepted or shown at film festivals, made by a famous artist or person of public interest or is famous, widely talked about and referenced in the media or the 'film community' or is of historic interest<sup>105</sup>. Most of the films and TV shows that meet these criteria are accepted by IMDb staff, including big screen and direct-to-DVD features, web series, documentaries, video games, music videos, experimental films, short films and commercials.

Proposals for additions and corrections to the IMDb database are submitted by users and sent to the IMDb data editors for processing.

##### 4.1.1.1 IMDb data processing

As a first step, all the data files available on the FTP site of IMDb<sup>106</sup> were downloaded. The project dataset was created using the following filtering steps:

- only films produced between 2000 and 2010 were selected;
- only films released on the market of at least one Member State of the European Union were selected;
- items representing irrelevant genres (documentaries, talk-shows, game-shows, reality-TV, music, sport, news and commercials) were eliminated from the dataset;
- items linked with 'VG' — video-game format were eliminated from the dataset.

104 - <http://www.imdb.com/pressroom/>

105 - [http://www.imdb.com/help/show\\_leaf?titleeligibility](http://www.imdb.com/help/show_leaf?titleeligibility)

106 - <ftp://ftp.fu-berlin.de/pub/misc/movies/database/>

As a result, the final project dataset contained 87 455 unique films identified by their titles and production year.

#### 4.1.1.2 Film producers data

IMDb is the source of data on film producers. 43 044 film producers are linked to IMDb with their films in the basic project dataset. The information available regarding producers on IMDb is scarce — it comprises their names and their country seat. However, additional variables have been created by the project team based on data available on IMDb, such as notable linkages between films and producers, including:

- establishment year of the film producer — based on the production year of the first film associated with the producer on IMDb;
- number of film projects during the analysis period — calculated on the basis of the number of films in the project dataset associated with the film producers;
- number of films among the 1 000 most popular films in Europe between 2000 and 2010 — calculated on the basis of films that made it to the list of the 1 000 most popular films and associated with a producer in the IMDb dataset;
- number of adaptations — number of films in the project dataset associated with a film producer that were marked as adaptations;
- number of public domain adaptations — number of films in the project dataset associated with a film producer that were marked as adaptations based on the material that is part of the public domain.

These variables were used for a more detailed analysis of the characteristics of the producers presented in Section 5.6 of Chapter 5 below.

#### 4.1.1.3 Financial data on films

IMDb contains financial data on some films. A budget estimation was available for 23 513 films from the project dataset. The budget currency is not standardised in the original IMDb data. Most often financial data is set in the currency of one of the producers' countries. In total, the budget is estimated on IMDb in 74 different currencies. In order to use budget estimations in the calculations, the original financial data was converted to the common base of US dollars using the average exchange rate for the year of production of the film, calculated on the basis of historical daily quotes available from OANDA<sup>107</sup>.

<sup>107</sup> - OANDA is a Canadian-based foreign exchange company providing, among others, currency conversion tools. As the analyses conducted within a project compare films produced in different years, financial variables have been converted to the year 2000 value of US dollars using average annual Consumer Price Indices calculated by US Bureau of Labor Statistics. As in econometric models the production year is one of the control variables, lack of conversion should not bias the results of the models; nevertheless, for consistency converted financial values are used also in the econometric models.



There are more complications as regards the information on revenue available on IMDb. The revenue information is presented in the section called 'Box Office'. Box office refers to theatrical box office earnings. Other possible sources of revenue such as TV licences, DVD sales and rentals, product placement fees etc. are usually not included in the IMDb/Box Office tracking<sup>108</sup>. Usually long listings of box office estimations present revenues from different geographical areas and in different currencies. For the purposes of the present study, wherever available, the project team took into account the most recent worldwide revenue estimation. If this data was not available for the film, the most recent revenue estimations from each available country, after converting it to the common base of US dollars, were summed up.

#### **4.1.2 Information about adapted books: Goodreads**

Many analyses envisaged under the scope of the project required not only information about the films but also data on the creative material adapted by the film producers. Identification of the possible sources of information on adapted material was, therefore, one of the crucial elements of the project. Although, as explained in Section 4.2.1 below, the film adaptations identified during the project could be based on different previous sources including books, legends, fairy tales, operas, musicals and plays, adaptations based on books were a major part of the entire datasets of adaptations and only for literary works was it possible to gather enough information facilitating additional insights about adapted content.

Goodreads, according to our knowledge the largest website gathering information on books, was chosen as the source of information on adapted literary works. Goodreads, which launched its services in 2007, stores information on 1.5 billion books and has over 50 million reviews of books<sup>109</sup>. The Goodreads API allows developers and researchers to access Goodreads data using tailored queries. Such queries were prepared by the project team on the basis of information gathered during the analysis of IMDb data and manual links between film and Goodreads book identifiers.

Film and book links were identified on the basis of IMDb information available on the writers' role, keywords and film reviews. The project team extracted information on over 4 300 books subject to film adaptations during the period of analysis.

Apart from the basic information regarding a book such as book title, isbn number, number of editions, or date of the first publication, the Goodreads service made meta information available regarding books; this user-created information included a count of text reviews and ratings and an average rating, which reflected the public interest in the book and perception of its quality.

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108 - <http://www.boxofficemojo.com/about/boxoffice.htm>

109 - <https://www.goodreads.com/about/us>

### 4.1.3 Information on cinema admissions to the films released in Europe: LUMIERE

The LUMIERE-database on admissions of films released in Europe was the third major source of data for the project. This database provides systematic data on admissions to films released in European cinemas since 1996. The LUMIERE database is composed by the European Audiovisual Observatory in collaboration with various specialised national sources, as well as the MEDIA programme of the European Union<sup>110</sup>. The coverage varies depending on the country and is shown in Table 3 below.

Table 3: Coverage rate of Member States cinema market in LUMIERE

cc	Number of films	Coverage rate
AT	2 313	95
BE	3 325	88-98
BG	1 110	25-30
CY	318	35-38
CZ	1 879	51-53
DE	3 176	87-93
DK	2 131	100
EE	1 390	NA
ES	4 234	95
FI	1 613	100
FR	5 042	93-96
GB	3 914	92-96
GR	813	5-38
HU	2 035	88-93
IE	194	0.1-7
IT	3 659	65
LT	642	NA
LU	919	45
LV	1 176	NA
NL	3 174	100
PL	2 280	92
PT	2 320	6
RO	1 741	100
SE	2 381	90
SI	1 172	37
SK	1 423	NA

Source: own calculations and information posted on <http://lumiere.obs.coe.int/web/sources/>

<sup>110</sup> - <http://lumiere.obs.coe.int/web/search/>

## 4.2 IDENTIFICATION OF ADAPTATIONS AND OF THE PROTECTION STATUS OF ADAPTED WORKS

### 4.2.1 Identification of ‘adaptations’ in the dataset

#### 4.2.1.1 Operationalisation of the adaptation concept

The identification of film adaptations of earlier works in the dataset was a crucial part of this project. The previous chapter has shown that there is no precise harmonised definition of the notion of adaptation, neither at EU nor at international level. Consequently, the exact criteria to determine whether a work constitutes an adaptation of an earlier work may differ from one jurisdiction to another. Some common basic principles that appear to be valid across borders could, however, be identified. Within the framework of this study, the project team only looked at cinematographic works based on pre-existing works such as novels, plays or operas. For the purposes of the project, films based on previous films such as sequels or remakes were excluded from the adaptation set.

In accordance with the legal provisions and case-law discussed in paragraph 3.2 of Chapter 3 above, it was assumed that a film that was recognised as based on a pre-existing work or associated with a specific work in a database created by users could be generally considered an adaptation, because the use of the underlying work in the film was easily identifiable by a lay person. During the subsequent manual check it was verified and assessed whether, based on the overall impression given by each respective film, the film could be considered as using the original elements borrowed from the pre-existing novel. The films marked as ‘inspired by’, ‘based on the idea of’ etc. were considered as wholly original because, as explained in Chapter 2, Section 2.2 above, they borrowed rather from the elements of the ontological public domain, which failed to meet the requirements of eligibility for copyright protection. The films using characters from other works were considered adaptations, unless the similarities consisted only in the use of the same names.

It must be noted that, in certain cases, a court may reach a different conclusion when applying the criteria of the relevant national law. A certain margin of error, especially for lesser known films with scarce information in IMDb, must be admitted.

#### 4.2.1.2 Algorithms used to identify adaptations in the dataset

During the first stage, possible film adaptations were pre-selected in accordance with two criteria based on IMDb data:

- the keywords associated with the film plots;
- and the description of the writers’ contributions to the film productions.

An IMDb keyword is a word or expression attached to an IMDb record to describe any important information related to an IMDb film. The main purpose of keywords is to allow users to easily search and identify titles that meet their criteria of interest. Keywords suggested by users must be accepted by an IMDb editor<sup>111</sup>. Keywords are not well standardised in IMDb. In the entire datasets there are over 160 000 unique keywords associated with films. Among them, the project team chose 87 keywords indicating possible adaptations such as *based-on-novel*, *based-on-play*, *adaptation* etc.

IMDb makes a file available containing a list of writers associated with films. This file lists writers directly engaged in the production of the film such as screenplay writers or writers of the film dialogues, and also authors of the base material that is adapted such as books, operas, musicals, etc. Apart from bibliographical data, the file contains also a description of the role of the writer within a project. These descriptions, similarly to keywords, are not well standardised in the IMDb database and are not available for all the authors. Within the project dataset over 500 different, often non-generic descriptions of roles were available<sup>112</sup>. Based mainly on the manual analysis of the file, the project team selected 125 role descriptions indicating the possible adaptation status of the film.

Films linked with the keywords and writers' contribution descriptions indicating the possible adaptation status of the films were further subject to detailed manual checks. In total, based on the above mentioned criteria, 6 937 possible film adaptations were chosen for further manual checks.

A specific database was built for the purpose of the manual check of pre-selected films, containing not only relevant information from the IMDb database, but also information on authors of possible adaptations and a list of the books written by the author imported from Goodreads. A research assistant was requested to verify the information available in the dedicated database, based on both the abovementioned databases and other sources (mainly internet sources). During the verification phase, the research assistant confirmed as to whether the film could be treated as an adaptation and whether the original material was part of the public domain. Additionally, the research assistant was requested to link a film to a Goodreads book record, and if such a book was not available on the preliminary list, to add the Goodreads identifier of the correct book to the record.

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111- [http://www.imdb.com/help/search?domain=helpdesk\\_faq&index=2&file=keywords&ref\\_=hlp\\_sr\\_1](http://www.imdb.com/help/search?domain=helpdesk_faq&index=2&file=keywords&ref_=hlp_sr_1)

112 - Besides such generic descriptions as based on the book by, detailed indications such as novel: *The Dreaming* are sometimes associated with individual authors.

## 4.2.2 Determination of the protection status of the adapted works

In order to assess which of the adaptations identified in the dataset were based on public domain works, the copyright protection status had to be determined for each creative work used as a basis for an adaptation. The protection status of each work was initially established during the verification phase, as described above. However, as the dataset contained films produced and books published for the first time practically all over the world, a detailed analysis had to be conducted to establish the protection status at the moment of film production<sup>113</sup>.

It was assumed that all the books whose authors died over 100 years before film production were in the public domain at the moment of adaptation, and the books whose authors died less than 50 years before film production were under copyright protection at the moment of film production. Books written by authors who died between 50 and 100 years before film production were reassigned for a second manual check.

The previous chapter explained that, at least within the European Union and in the United States, the term of copyright protection amounts to 70 years pma. Yet, it was also stressed that within the time period relevant to this study, many legislative changes (notably with regard to US copyright) and exceptions have to be taken into account. During the second manual check, the research assistant determined the protection status of books being adapted to film. As the protection status of the same book may differ depending on the country, it was assumed, for the purposes of project, that production companies make decisions on adaptations based on the legal provisions of the country of production. In the event of co-productions the longer term of protection was taken into account. Where the country of origin of a literary work and the country of the film production differed, it would be necessary to examine each country of production separately in order to find out whether the respective country applied the shorter term rule. As the approach to this issue may differ in different time versions of the copyright laws and it might be necessary to examine also the case-law of the courts of each respective state<sup>114</sup>, it would not be feasible to examine the application of the shorter term rule in each country separately. For these reasons the project team decided to resort to a simplification, assuming that:

- EU countries apply the shorter term rule<sup>115</sup>;
- third countries do not apply the shorter term rule at all. The reason for this is that the majority of films produced in non-EU countries came from the USA, where the shorter term rule does not apply.

113 - Creative works other than books that were adapted for films are not so problematic, as either they predated the modern concept of copyright (legends, fairy tales) or they were adapted usually over 100 years after the author's death.

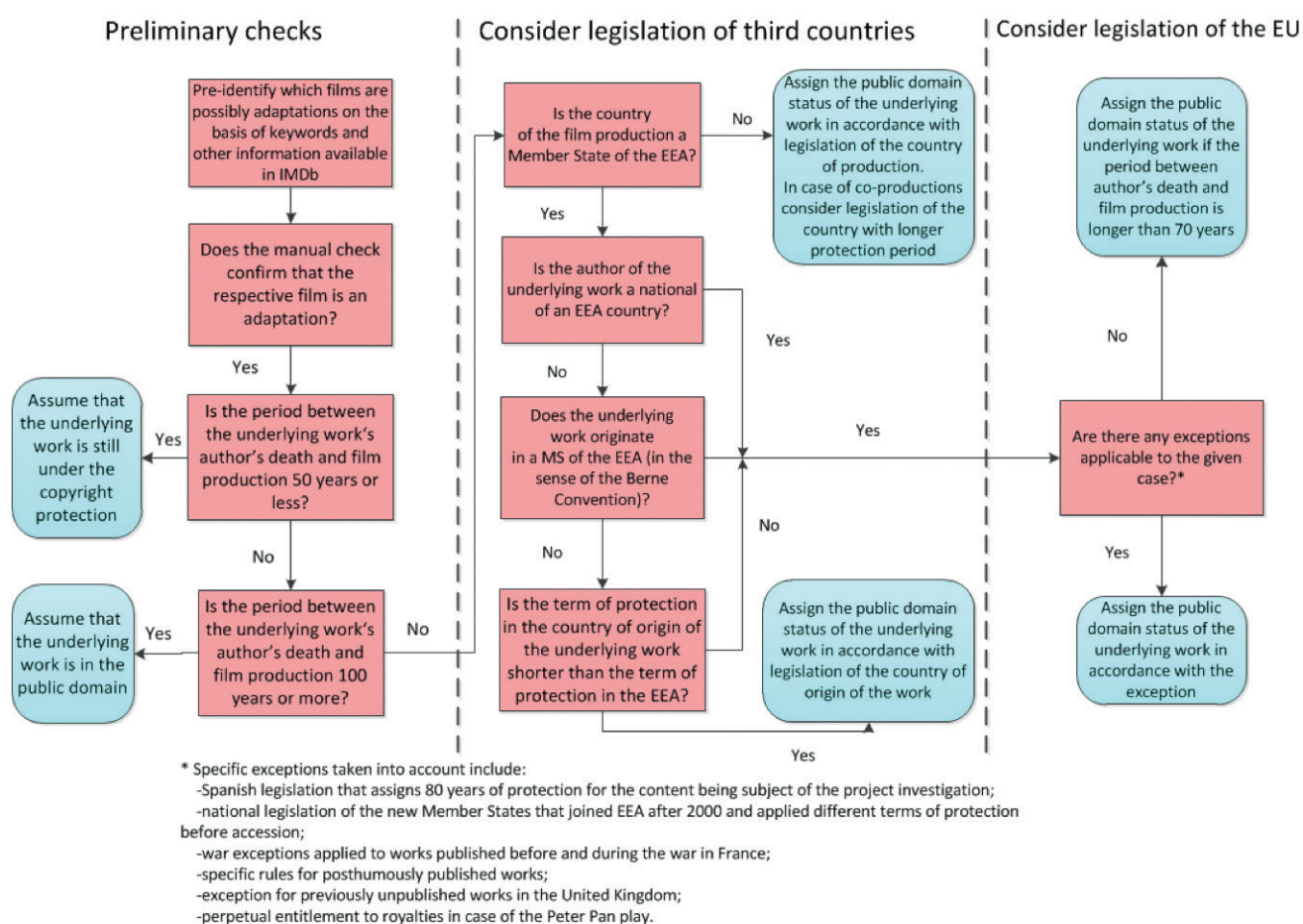
114 - As is the case of the United States, where the non-application of the shorter term rule is a result of the courts' interpretation. See, for example, (Brownlee, 1995).

115- Given the requirement laid down by the Term Directive, it can be considered a fact rather than a simplification.

Where possible, the exact year of the change of status was recorded in the database for books adapted to film within a period of 5 years before and 5 years after the status change.

A detailed description of the algorithm used to determine the protection status of the works is illustrated in Figure 1.

Figure 1: Algorithm used to determine the status of protection of the base work in the year of the film production



### 4.3 DATA LIMITATIONS

Preparation of the dataset was one of the biggest challenges of the project. Although the project team was able to access data from rich datasets containing information on films, books and detailed data on cinema attendance in Europe, these datasets were prepared for very different purposes than economic research. There were no common identifiers that could facilitate linking various sources of information. Even within the IMDb files to which the project team had access, there was no common identifier across different data tables. Therefore, tapping into the rich information stored in those datasets required much effort in data preparation, standardisation and merging.

The scope of the available information on films and books depended on their popularity. For the biggest productions with famous actors the scope and reliability of the information is very good and is constantly being verified and updated by thousands of users. However, there is a large group of semi-professional productions, for which the range of available information is very poor. There are many films for which only the name, year of production and country of production are available. There is no information on keywords, film producers engaged or financial data — variables that are crucial to the present project. Therefore, the risk of misclassifying lesser known films with scarce information was larger as compared to films with a lot of public interest and extensive information available in IMDb.

During the project execution, where the status of the films pre-classified as possible adaptations was subject to a separate manual check, the number of false positive observations that were classified as adaptations but in fact were based on entirely original screenplays, was minimal. However, due to the sheer size of the database and sometimes very scarce information available in the original data sources, the project team was not able to verify the extent of false negatives — films that were classified as based on entirely original screenplays but were in fact based on the previous creative content. Although it is impossible to assess the scale of eventual bias that may stem from the presence of false negatives in the dataset, due care was taken to limit its impact. For the analyses presented in the main body of the report, a subsample of the films based on entirely original screenplays was limited to those films with at least one keyword.

For full transparency the results of the analyses conducted on the entire sample are presented in the annex. Table 4 below presents a comparison of the profile of the full sample of firms with the reduced sample.



Table 4: Comparison of film profiles in the full and restricted IMDb sample

Type	Full IMDb sample			Reduced IMDb sample		
	n	Median number of keywords	Mean number of keywords	n	Median number of keywords	Mean number of keywords
Adapted, public domain	1 158	4	16.55	1 158	4	16.55
Adapted, under copyright	5 067	7	36.42	5 067	7	36.42
Original	81 230	0	8.38	36 202	5	18.81

Whenever justified by the research question and the availability of data, films that had never been shown at cinemas but only on TV or available on other channels were included in the analyses. However, econometric analyses focused on private returns from the adaptation strategies in terms of cinema attendance and the box office were limited to cinema productions only.

The comparison of ‘film success’ based on their adaptation status was an important part of the analysis. Ideally, all sources of revenue related to the film should be analysed to assess the contribution of the adaptation status, and the base material used for adaptation to film performance. There are many sources of revenue including theatres, TV licences, DVD sales, streaming, home-rentals and they are not limited to just one country. Non-traditional sources of revenue, such as streaming or merchandising, are increasingly important for a film’s financial performance<sup>116</sup>. Yet, the complete picture of a film’s finances is available only to a few film producer insiders. So far there is no entity that systematically monitors all of these revenue streams and makes it publicly available for all of the individual films released in Europe. As a result, a large part of the film industry’s revenue remains nearly invisible to the general public (Epstein, 2012). However, theatrical attendance is still an important source of a film’s revenue and its box office success may determine its overall financial performance. Box office data is thus still the basic ‘success’ variable used in economic research (Joshi & Mao, 2012; Pokorny & Sedgwick, 2010; Lampel & Shamsie, 2000; Escoffier & McKelvey, 2015; Luo, 2014; Hadida 2009; Kim, 2013; Sood & Drze, 2006). The econometric models estimated within the present project relied mainly on attendance data in European cinemas, which largely determines European box office revenue.

Most importantly, we had no reason to believe that the data problems discussed above affected film adaptations, both based on previous works protected by copyright or public domain content, to a higher degree than films based on original content. Therefore, although data availability seriously limits the scope of the analysis, in our view it did not bias its results.

<sup>116</sup> - For the recent changes in the structure of the audiovisual revenues in Europe see, for example, (Cabrera Blázquez et al. 2016).

# 5 STATISTICAL ANALYSIS ON THE DERIVATIVE USE OF PUBLIC DOMAIN CONTENT IN THE FILM INDUSTRY

DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS

## 5.1 USE OF PUBLIC DOMAIN CONTENT FOR ADAPTATIONS IN THE FILM SECTOR

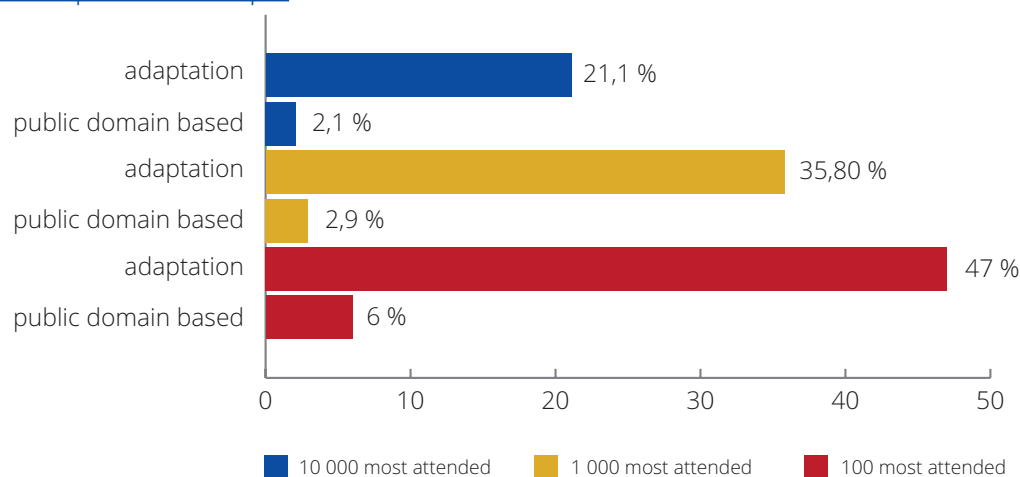
### 5.1.1 The share of public domain adaptations in the dataset

As explained in Chapter 4, the level of detail of the available information in IMDb varies depending on the popularity of the film. Keywords and roles associated with writers in IMDb were key data on the basis of which possible adaptations were preselected; therefore, a lack of these crucial variables for some films may result in an underestimation of the share of adaptations, including those based on public domain content, in the dataset. To account for this possible bias, the use of pre-existing creative content was analysed in the reduced sample of films for which at least one keyword was available.

In the restricted sample of films with at least one keyword available in IMDb, adaptations make up **14.7 %** of all films. The share of films based on the public domain amounted to **2.7 %**. Finally, the share of public domain based content among the adaptations was **18.6 %**.

As seen in **Figure 2** below, the uptake of pre-existing creative content as a base for film adaptations rises with a films' popularity. Films based on the public domain accounted for **2.1 %** of the 10 000 most attended films, **2.9 %** of the 1 000 most attended films and as much as **6 %** of the 100 most attended films in Europe between 2000 and 2010.

Figure 2: Share of adaptations and public domain based films among the most popular films in Europe — full sample



### 5.1.2 Attendance at public domain films in European cinemas

Overall, during the period of 11 years studied in the analysis, the number of admissions to public domain based films in European cinemas surpassed **330 million**, which corresponded to almost **4 %** of the overall number of cinemagoers. However, at the same time, films adapting creative content that were still under copyright protection attracted almost ten times more viewers, which corresponded to **35 %** of the market.

The most popular films based on the public domain attract a lot of attention and interest among European cinemagoers. As can be seen in Table 5 below, public domain content may be attractive to millions of viewers when adapted into a film.

Table 5: Top 20 films based on public domain content and ranked by the number of viewers in European cinemas

Title	Year of production	Country of production	Number of European markets film was released on	Admissions	Rank
Alice in Wonderland	2010	US	23	27 337 900	35
Troy	2004	US / GB / MT	23	25 312 565	42
War of the Worlds	2005	US	23	22 973 752	55
Tangled	2010	US	23	19 756 193	68
The Passion of the Christ	2004	US	22	18 246 447	77
Sherlock Holmes	2009	US / GB / DE	23	16 766 692	88
Van Helsing	2004	US / CZ	20	12 629 959	139
The Curious Case of Benjamin Button	2008	US	21	12 465 263	141
The Jungle Book 2	2003	US / AU	19	11 924 731	152
Atlantis: The Lost Empire	2001	US	20	11 112 304	165
A Christmas Carol	2009	US	23	9 479 084	211
Treasure Planet	2002	US	18	8 346 871	246
Pride and Prejudice	2005	GB / FR / US	21	7 484 969	284
The Sorcerer's Apprentice	2010	US	23	7 252 477	295
Gulliver's Travels	2010	US	23	6 751 911	328
Pinocchio	2002	IT / FR / DE	11	6 650 620	334
Dr. Dolittle 2	2001	US	17	6 436 695	343
Journey to the Center of the Earth	2008	US	22	5 331 549	430
Beowulf	2007	US	21	5 012 055	455
Around the World in 80 Days	2004	GB/ US / IE / DE	24	4 886 212	466

As shown in the analysis of the distributional properties of the number of admissions<sup>117</sup> (Figure 3, below), few blockbusters attract a lot of interest from the public and a huge audience of dozens of millions. The audience for the majority of films however, regardless their adaptation status, is much lower and does not exceed two hundred thousand viewers in all Member

<sup>117</sup> - Boxplot is a compact summary of the distributional properties of data, which is particularly useful for comparing distributions between groups (Wickham & Stryjewski, 2011). Boxplots are made up of six components, chosen to give a robust summary of data distribution in the datasets:

- the median;
- two hinges indicating the upper and lower quartiles;
- two extremes which lie 1.5 times the interquartile range from the median;
- two whiskers that connect the hinges to the extremes;
- potential outliers marked as dots outside of whiskers;
- notches around the median, which extend for  $\pm 1.58 \cdot IQR / \sqrt{n}$ , which corresponds roughly to 95 % confidence interval.

States of the European Union. This pattern is consistent over many variables related to films and books analysed in the report, such as cinema attendance, box office revenue, budgets or number of reviews and is consistent with Walls (2014) observations of empirical regularity of winner-take-all payoff distributions in creative industries.

Both median and mean numbers of viewers indicated that the expected audience for film adaptations based on public domain content was lower than the expected audience for film adaptations based on content protected by copyright, but higher than for films based on original content. However, the non-parametric Games-Howell test showed that only the difference between films based on entirely original screenplays and films based on content protected by copyright was statistically significant at the 95 % level. The difference between films based on entirely original screenplays and films based on public domain content was statistically significant at the 90 % level. The difference between films based on protected content and public domain content was not statistically significant.

Figure 3: [Distributional properties of total admissions to European cinemas — restricted sample](#)

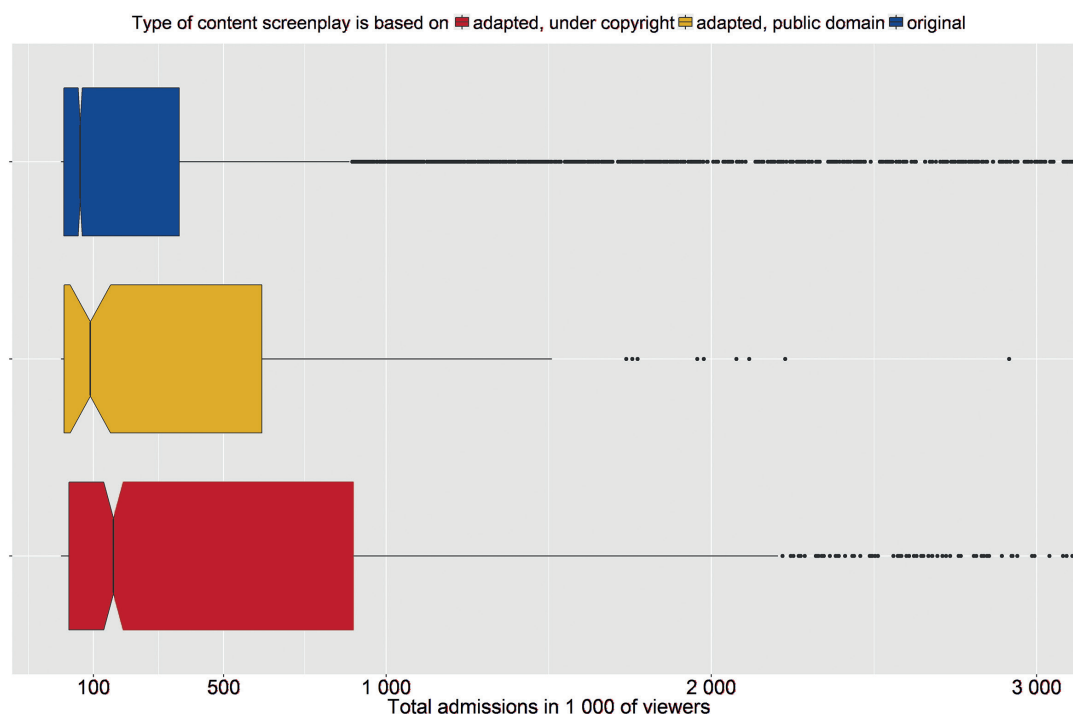


Table 6: Summary statistics for number of viewers broken down by film categories based on screenplay type — restricted sample

	Original content	Adapted, public domain	Adapted, under copyright
Number of observations	6 828	238	2 053
1st quartile	9.1	9.72	24.65
Median number of viewers	59.03	90.07	161.2
Mean number of viewers	821.7	1 395	1 605
3rd quartile	363.1	617.4	898
Max number of viewers	75 140	27 340	58 400

As shown in Figure 4 and Figure 5 below, there were important differences in the popularity of public domain based film adaptations among viewers depending on the country.

In absolute numbers, unsurprisingly, the largest countries dominated the ranking, with the UK being the Member State with the largest number of viewers of public domain based film adaptations in the EU between 2000 and 2010. During the 11 years covered by the study, over 65 million people saw public domain based films in British cinemas. In France, Spain, Germany and Italy the number of viewers interested in seeing film adaptations based on public domain content exceeded 40 million.

The analysis based on the relative share of public domain based film adaptations in the overall film market (Figure 5, below) showed, however, a different picture. Poland, with an over 8 % share of public domain based films in the film market was the leader of the ranking. The popularity of films based on works in the public domain was generally higher in the Eastern countries of the European Union.

Figure 4: Number of admissions to public domain based films in the Member States of the EU in the period 2000-2010 (in thousands of viewers) — full sample

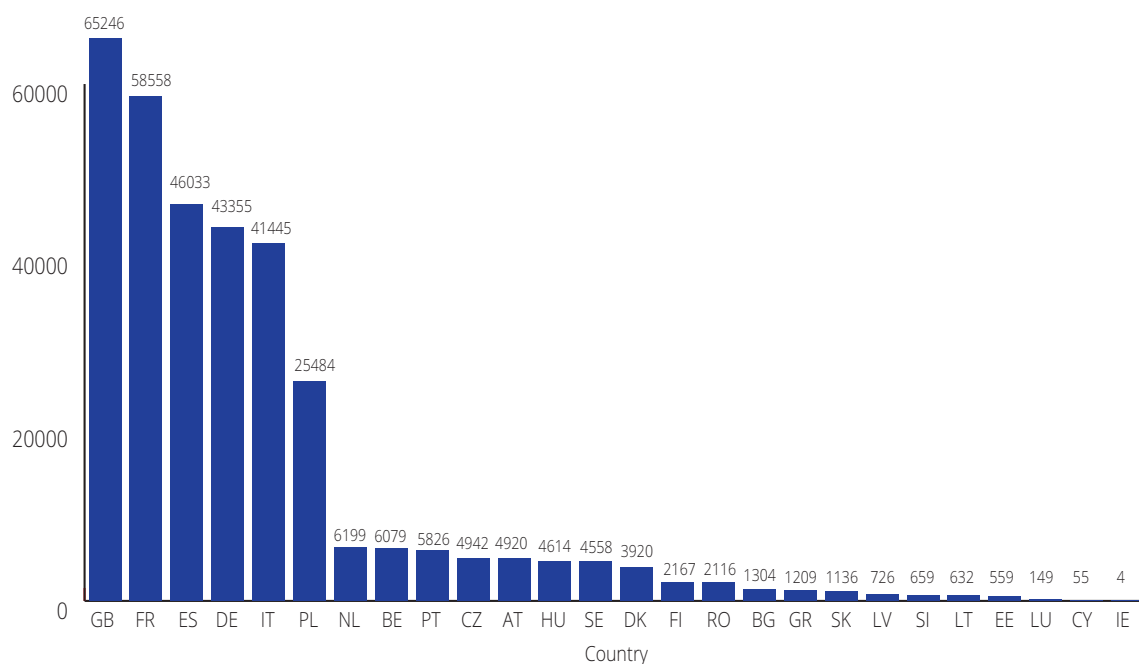
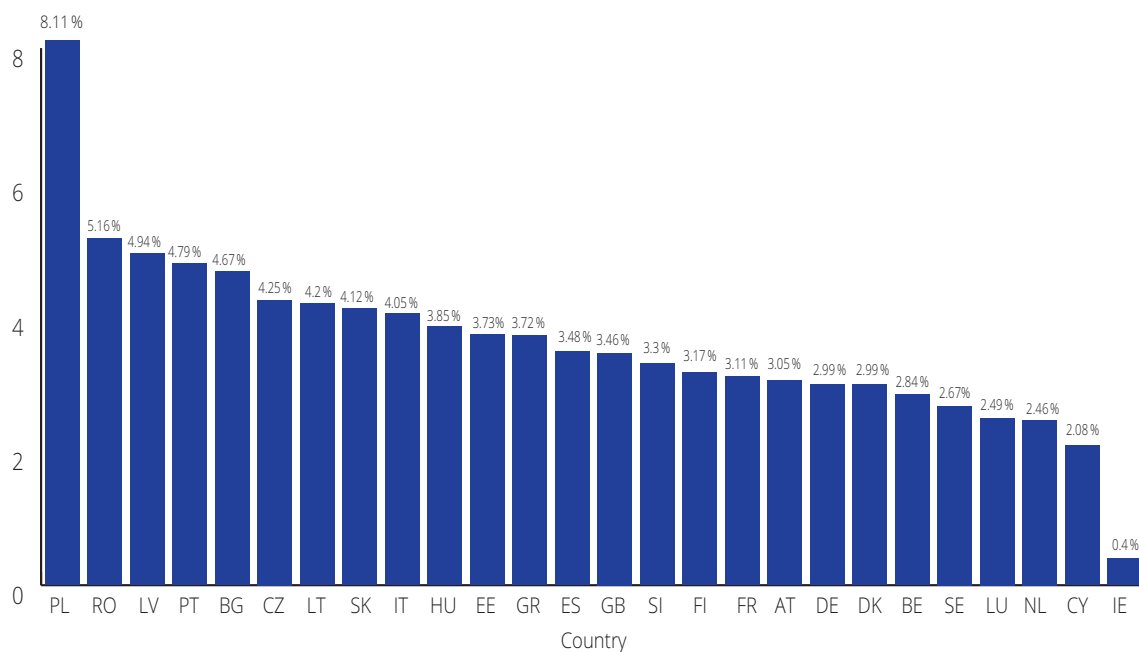


Figure 5: Share of public domain based films in total admissions in the EU Member States in the period of 2000-2010 — full sample





## 5.2 IMPORTANCE OF TIME DIMENSION FOR THE LIKELIHOOD OF THE ADAPTATION OF A WORK INTO A FILM

As shown in Section (5.1), film adaptations based on the public domain constituted a small fraction as compared to films adapting creative content that were still under copyright protection. Joshi & Mao (2012) hypothesised that due to the experiential nature of adapted content, the accessibility of brand equity fluctuates over time. For a book that has only recently reached its peak of popularity, the readers' memory of the book is strong and readily retrievable. High accessibility to book-related information contributes strongly to the 'equity momentum' increasing the probability of adaptation strategy success. A rapid decline in 'brand equity' value of creative content over time, both for non-derivative and derivative uses, is the principal factor working against the adaptation of public domain content<sup>118</sup>.

Landes & Posner (2003) documented depreciation rates of works protected by copyright for non-derivative purposes on the basis of data on renewals and registrations. Based on the rates of copyright renewals in the United States, they estimated that the annual economic depreciation rate of works protected by copyright ranged from 5.4 % in 1990 to 12.2 % in 1914 with an overall average of 8.3 %. They estimated also that out of the books registered for the first time in 1934, 50 % had fully depreciated by 1944, 90 % by 1977 and 99 % by 2000. Out of 10 027 titles published in the United States in 1930, only 1.7 % — 174 titles were still in print in 2001 (Landes & Posner, 2003).

A similar effect can be expected in the uptake of previous creative content by the film industry. As can be seen in Figure 6, the number of film adaptations reached its peak four years after first publication of the original books. Starting from the fifth year following first publication, a rapid exponential decline in the number of film adaptations can be observed. By and large, the longer the time span after first publication the less attractive the book is for the film industry.

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118 - Although, at least for some of the most popular public domain works, this may be compensated by the school curricula that keep them in the public imagination.

Figure 6: Number of adaptations as a function of time since the moment of first publication of the book

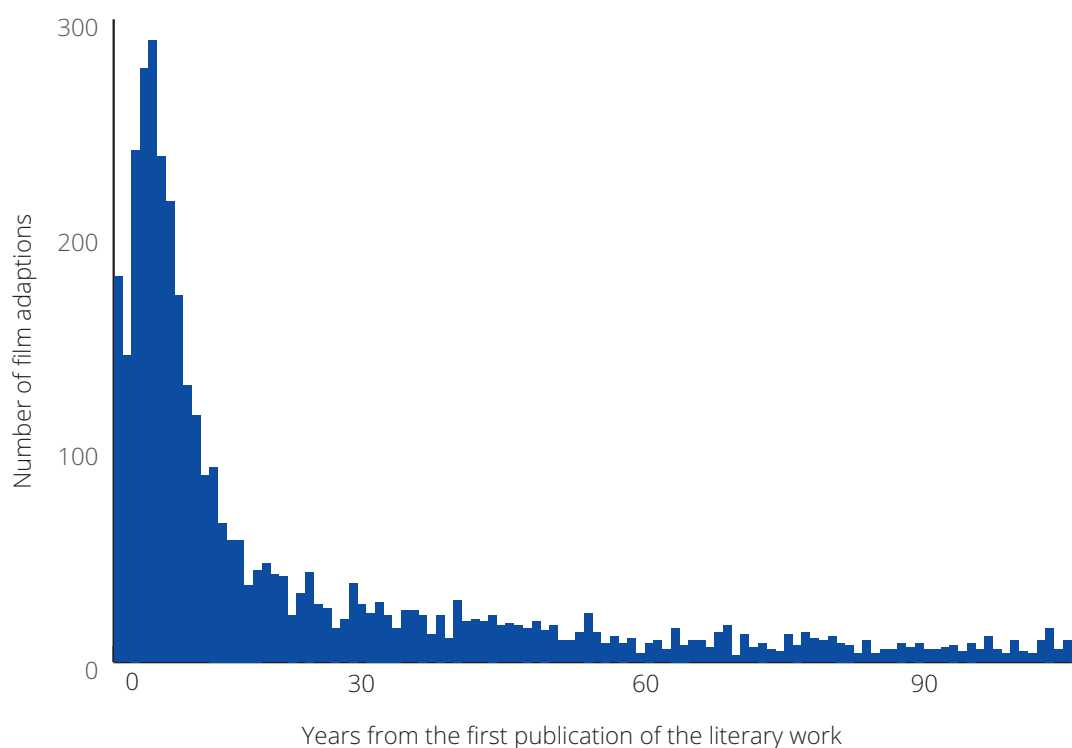


Table 7: Results of the econometric model of derivative value depreciation rate

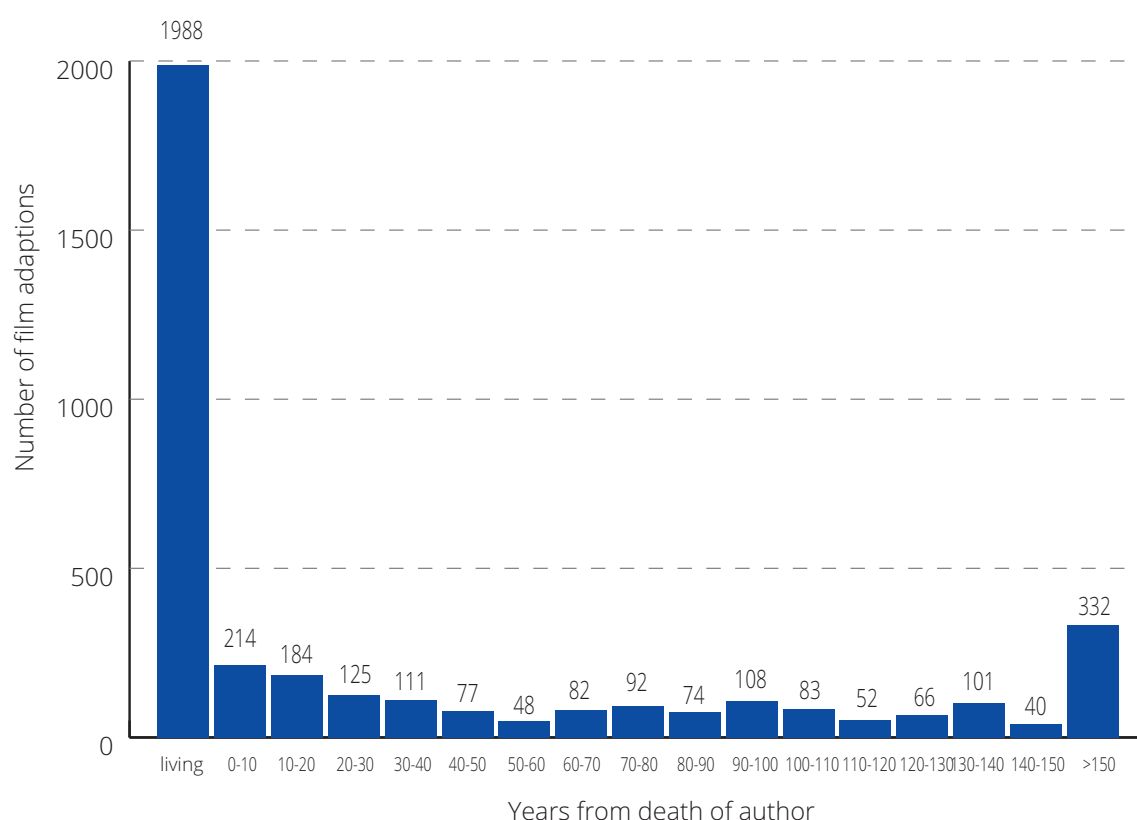
	Dependent variable: log of number of film adaptations
years	-0.075*** (0.005)
years squared	0.0004*** (0.00004)
Constant	5.190*** (0.108)
Observations	111
R <sup>2</sup>	0.865
Adjusted R <sup>2</sup>	0.863
Residual Std. Error	0.385 (df = 108)
F Statistic	346.514*** (df = 2; 108)

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

The results of the model presented in Table 7 imply that the average depreciation rate in the first 10 years amounted to 6.8 %, between 10 and 20 years to 6 % and lowered to 5.2 % in the period between 20 and 30 years following first publication of the book. The probability of derivative use of the book for film adaptation was already 50 % lower after 12 years from its first publication. The number of books being adapted into films 50 years after first publication was slightly higher than the 7 % of books adapted just after they were published. The model implies that the number of books adapted for films 70 years following first publication was over 95 % lower than those adapted in the first years following publication.

A similar pattern of the decline in economic value of creative works for film adaptations is presented in Figure 7 below; it shows film adaptation as a function of time after the death of the author.

[Figure 7: Number of adaptations as a function of time following the death of an author](#)



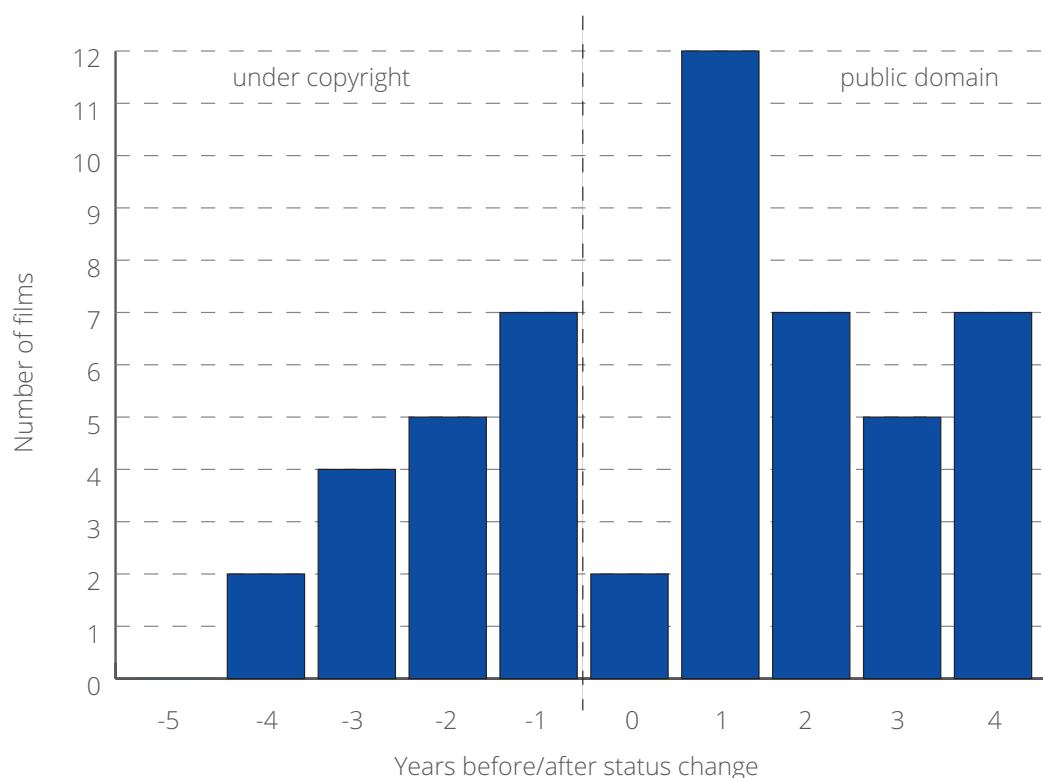
It could be expected that the cost of the licence for the adaptation of books into films follows the same pattern. The licence fee for adaptation rights close to the date on which the protection status of the underlying material changes should be relatively low, and should not be a huge financial burden for most film producers. Potentially more burdensome may be identification of all the rights holders close to 70 years after the authors' death, and the entire negotiation process necessary for the exploitation of adaptation rights.

On the contrary, the approaching date of the change of protection status could be an additional incentive for some film producers: they may wish to benefit from the exclusivity of adaptation rights a few years before everybody else can use the material for free. From their point of view it may be a wiser strategy to use the content before it becomes part of the public domain and gain 'a first mover advantage', instead of waiting for the change of protection status and risking competition from other producers. Adaptation of the protected material just before the copyright protection expiry could be an attractive strategy if the licence fees are relatively cheap and the underlying material still conserves its equity value for contemporary readers.

If this line of reasoning is correct, the very year of the legal change from copyright protection to public domain status should not constitute an important threshold for film producers, and film adaptations should be made on both parts of the borderline between copyright and public domain status of the pre-existing material.

To check this hypothesis, within the entire film sample, the 62 film adaptations were selected that were produced in the period of 5 years before and 5 years after the change of protection status of the underlying work. For each year in this period, a number of film adaptations were counted; the final result of this exercise is presented in Figure 8 below.

Figure 8: Number of film adaptations based on literary works around the year of the protection status change



Although there was somewhat more interest in the adaptation of books after the expiry of copyright protection for the work, the difference was not statistically significant. There was some interest in the adaptation of books just before they fell into the public domain and this interest rose as the status change approached.

### 5.3 CHARACTERISTICS OF ADAPTED CONTENT

As discussed in the previous section, content that is in the public domain cannot compete with content protected by copyright on the time dimension. Public domain books have been written years or ages before their adaptation into films. Yet, as shown in Table 8 below, some public domain books are adapted almost on an annual basis, and new generations of screenplay writers and directors are able to present their own, fresh reading of the adapted content.

Table 8: The 20 books with the highest number of adaptations between 2000 and 2010

No. adaptations	Title of the work
12	Don Quixote by Miguel de Cervantes Saavedra
12	Othello by William Shakespeare
11	Hamlet by William Shakespeare
10	Macbeth by William Shakespeare
9	A Christmas Carol by Charles Dickens
9	Carmen by Prosper Mérimée
9	Romeo and Juliet by William Shakespeare
8	A Midsummer Night's Dream by William Shakespeare
8	La Traviata by Giuseppe Verdi
8	The Three Musketeers by Alexandre Dumas
7	Bible
7	Dracula by Bram Stoker
7	King Lear by William Shakespeare
7	The Ugly Duckling by Hans Christian Andersen
7	Winnie-the-Pooh by A.A. Milne
6	Shrek! by William Steig
5	Alice in Wonderland by Lewis Carroll
5	Don Juan Tenorio by José Zorrilla
5	Dr Jekyll & Mr Hyde and Other Stories by Robert Louis Stevenson
5	Oliver Twist by Charles Dickens

Almost all of the books listed in Table 8 above that are among the most adapted content during the analysis period are examples of real masterpieces. Many of the books are part of contemporary school curricula and are widely read by contemporary readers. The decision to choose public domain content as a basis for film adaptation is related to the fact that the plots and characters imagined by authors are still relevant and appealing for the contemporary reader. In such cases, in the parlance of the Joshi & Mao (2012) theory, *book equity* markedly prevails over its *recency* factor and maintains its economic attractiveness to film producers and cultural value to the general public almost indefinitely. If this conjecture is correct, they should still be relevant for the cultural experience of contemporary readers.

Table 9: The 20 authors with the highest number of adaptations between 2000 and 2010

No. adaptations	Name
81	William Shakespeare
67	Hans Christian Andersen
33	Stephen King
27	Agatha Christie
25	Charles Dickens
23	Jacob Grimm; Wilhelm Grimm
19	Robert Louis Stevenson
18	Anton Chekhov
17	Edgar Allan Poe
15	H.P. Lovecraft
14	Fyodor Dostoyevsky
14	Georges Simenon
14	Molière
12	Alexandre Dumas
12	Henrik Ibsen
12	Jane Austen
12	Miguel de Cervantes Saavedra
11	Arthur Conan Doyle
11	Giuseppe Verdi
11	Håkan Nesser

To check this hypothesis, the project team compared two proxies for the book equity of adapted books that were still under copyright protection with books already in the public domain: the number of text reviews associated with the book in Goodreads and the average rating of the book in Goodreads.

As writing a text review in Goodreads requires some intellectual work related to the formulation and exposition of a reader's own position toward a book, it can be treated as a good proxy of readers' interest and engagement. The results of this comparison are presented in Figure 9 and Table 10 below.

A comparison of the median and mean number of reviews clearly indicated that by and large, a book typically adapted under the public domain attracts far more attention from Goodreads users than a typical book still under copyright protection.

Figure 9: Comparison of the number of text reviews for books under copyright protection and books in the public domain being adapted to films

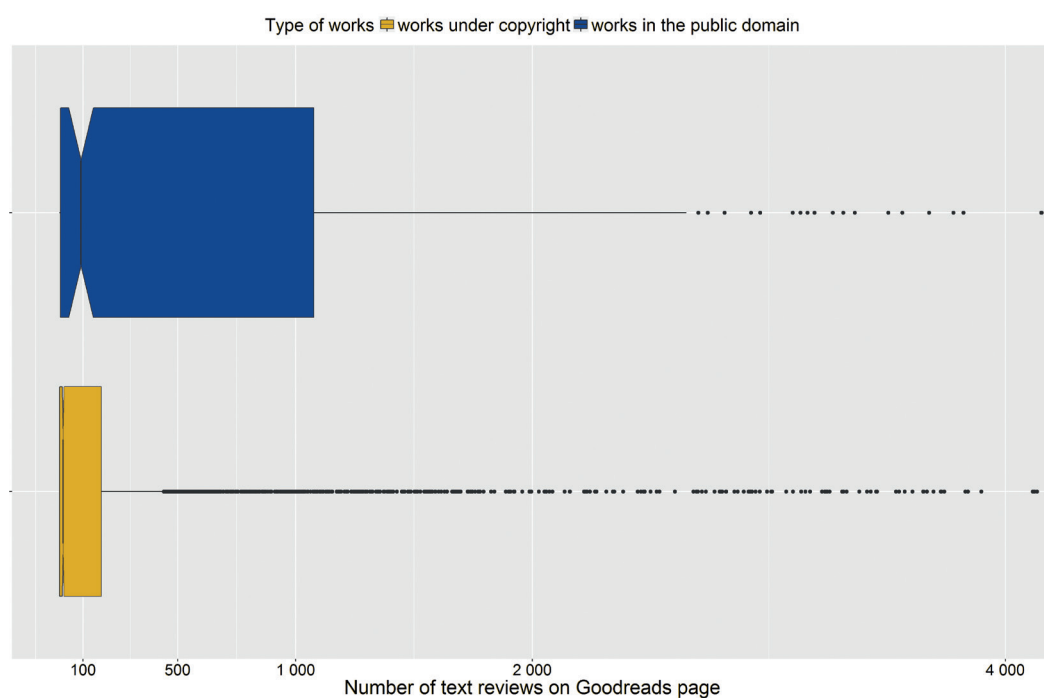


Table 10: Summary statistics for the number of text reviews for books adapted into films on the Goodreads website

	Public domain	Under copyright protection
Number of observations	1 037	3 677
1st quartile	5	1
Median number of text reviews	91	16
Mean number of text reviews	1 689	743
3rd quartile	1 076	177
Max number of text reviews	40 580	89 410

The average rating of a book was treated as a proxy of the perception of its quality or cultural value in the mind of the average user of Goodreads. A comparison of average ratings for adapted books still under copyright protection and for books in the public domain is presented in Figure 10 and Table 11 below.



Figure 10: Comparison of mean reviews for books under copyright protection and books in the public domain being adapted to films

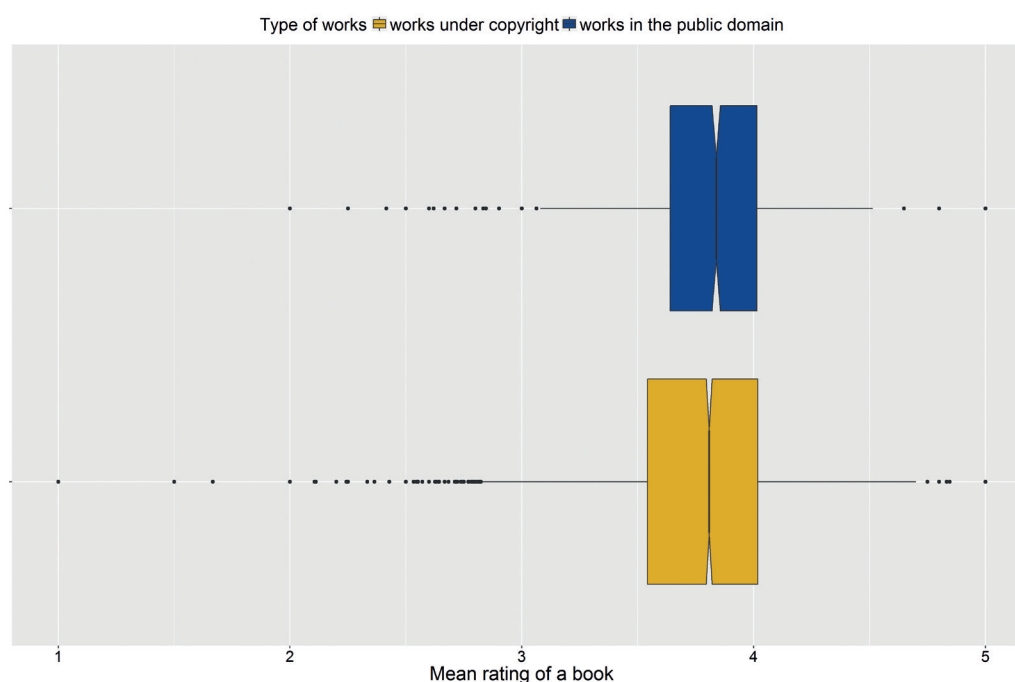


Table 11: Summary statistics for the mean review of books adapted into films on the Goodreads website

	Public domain	Under copyright protection
Number of observations	1 037	3 677
1st quartile	3.640	3.541
Median average review	3.838	3.808
Mean average review	3.805	3.766
3rd quartile	4.014	4.018
Max average review	5	5

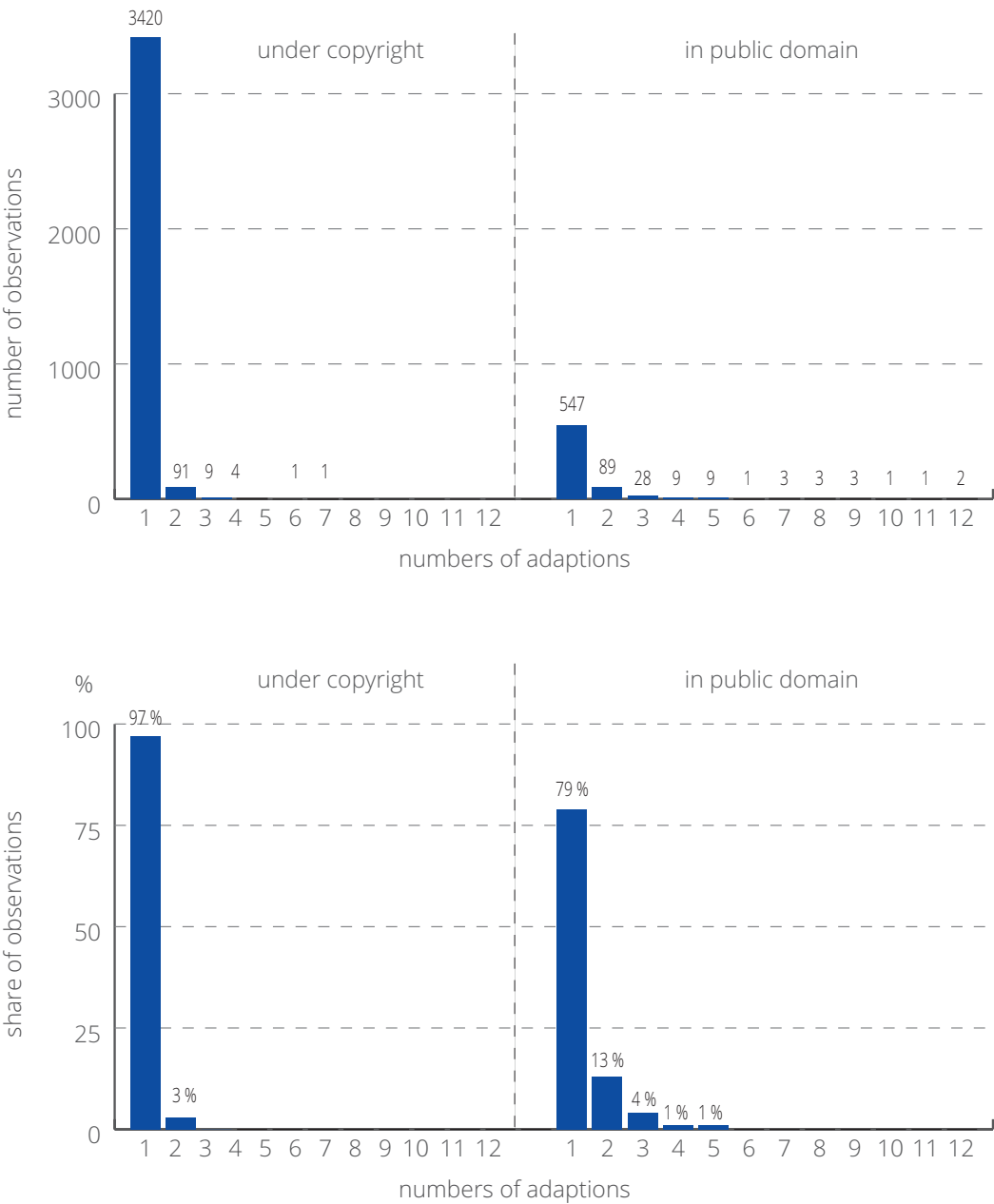
Interestingly, although the median and mean average review of books in the public domain was slightly better than for works under copyright protection and the difference was statistically significant at the 95 % confidence level, it was not as large as in the case of the number of reviews.

The results of the analysis of the equity of books used as bases for adaptation shows that what differentiates books in the public domain from those that are still under copyright protection is user engagement rather than the readers' perception of quality.

5.4 RATES OF EXPLOITATION OF ADAPTED CONTENT

The rankings presented in Table 8 and Table 9 above suggested that at least some books in the public domain may be subject to adaptation more often than books that are still under copyright protection. This intuition was confirmed by the analysis of the frequency distribution of the number of adaptations per book, presented in Figure 11 below.

Figure 11: Distribution of number of adaptations per book depending on the protection status of the adapted book

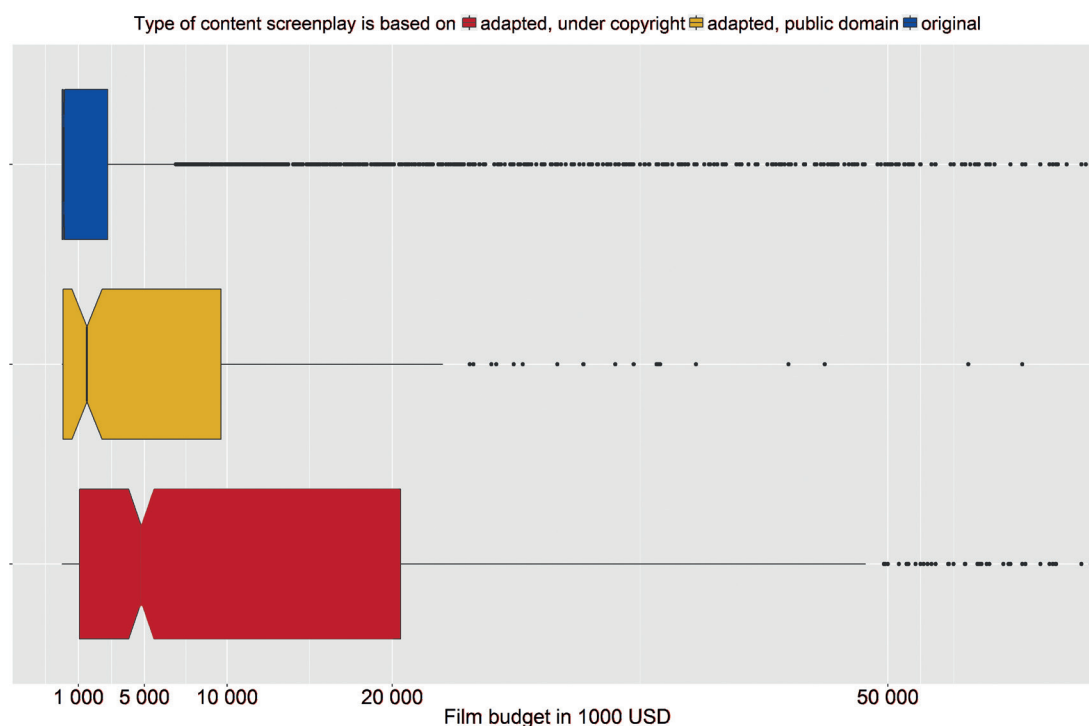


Although the majority of books in the dataset were subject to adaptation only once during the 11 years of the analysis period, there was a statistically significant difference in the mean number of film adaptations between books that were still under copyright protection and those in the public domain. The mean number of adaptations of books under copyright was 1.04, whereas the mean number of adaptations of books in the public domain was 1.45. It confirms that public domain status increases the likelihood of multiple adaptation of the book. The results of this analysis suggest that public domain status may contribute to social welfare by increasing the variety of adaptations and satisfying more heterogeneous expectations of the audience.

## 5.5 COMPARISON OF FILM BUDGETS

Similarly to many phenomena related to the creative industries, film budget distribution is highly skewed to the right, with the mean driven by a few outliers characterised by very high financial investment.

Figure 12: Distributional properties of film budgets — restricted sample<sup>119</sup>



Film budgets deflated to USD value in the year 2000

<sup>119</sup> - For visibility purposes, the plot is limited to USD 50 million.

Table 12: Summary statistics for film budgets (in USD 1 000) broken down by film categories based on screenplay type — restricted sample

	Original content	Adapted, public domain	Adapted, under copyright
Number of observations	10 833	276	1 577
1st quartile	6.12	64.17	1 059
Median budget	107.70	1 509	4 799
Mean budget	5 120	12 410	17 900
3rd quartile	2 764	9 632	25 000
Max budget	249 200	160 500	230 600

As shown in Figure 12 above, both median and mean budgets were the highest for film adaptations based on content protected by copyright. The expected budget was much lower for film adaptations based on public domain content than for films based on content still protected, but higher than for films based on entirely original scripts<sup>120</sup>.

This pattern of investment may prove the hypothesis stated by Joshi & Mao (2012) that adaptation strategy lowers the risk of the film project also in the perception of film-makers. When adapting already tested content, they may be willing to invest higher sums, as they expect the break-even to be easier.

The difference between the expected film budgets based on content protected by copyright and those based on content in the public domain is not surprising given that producers involved in protected content adaptation have to pay a licence fee to the rights holder of the original content. Film producers may also be willing to invest more money in films based on content for which they can be guaranteed exclusivity of exploitation in the film market; this is the case for works still under copyright protection.

What is striking, however, is the statistically significant difference between film budgets of films based on public domain content and films based on entirely original scripts. As already discussed in Section 2.3 of Chapter 1, one negative consequence of the public domain status of creative content may be higher uncertainty related to the fact that anybody may use the same content for a competing project. It seems that this possibility does not discourage film-makers from investing substantial amounts of money in projects based on works in the public domain. On the contrary, investing higher sums of money in such projects may be a strategic move of the film producers, which may raise the costs of potential competitors and discourage them from investing in an adaptation of the same material.

<sup>120</sup> - The difference between mean budgets in a pairwise comparison of all three groups is statistically significant, as confirmed by the post-hoc Games-Howell test.

Another reason for the higher budgets of public domain based film adaptations may be related to the necessity for film producers to invest money in making the already known story more attractive to the cinema audience. Attracting an audience to the adaptation of a story that has been retold many times already in the past in different media may be more challenging than attracting an audience to a fresh story based on an original screenplay.

Interestingly, relatively higher budgets of film adaptations based on public domain content confirm an observation of Pollock et al. (2010), who in context of the books market noticed that *'for public domain works anyone can produce an edition and this will permit entry at both ends of the market: at the top-end with "luxury" and special editions and at the lower end with budget editions marketed at the very lowest cost possible'* (Pollock et al. 2010).

## 5.6 CLUSTER ANALYSIS OF THE FILM PRODUCERS THAT ADAPT PUBLIC DOMAIN CONTENT

Usage of public domain content is far from common in the entire project dataset. Only **4% (1 660)** of the producers were engaged in the production of films that were based on previous creative content already in the public domain at the moment of film production. The overwhelming majority of the film producers were never engaged in the adaptation of public domain content. However, the analysis conducted in Section 5.1 above demonstrated that such films may be attractive for the contemporary public. Similarly, anecdotal evidence indicates that there are film production companies for whom the public domain may be an important part of their business models and they found ways to turn this historical content into interesting films. A cluster analysis was conducted to discern the typical characteristics of such producers.

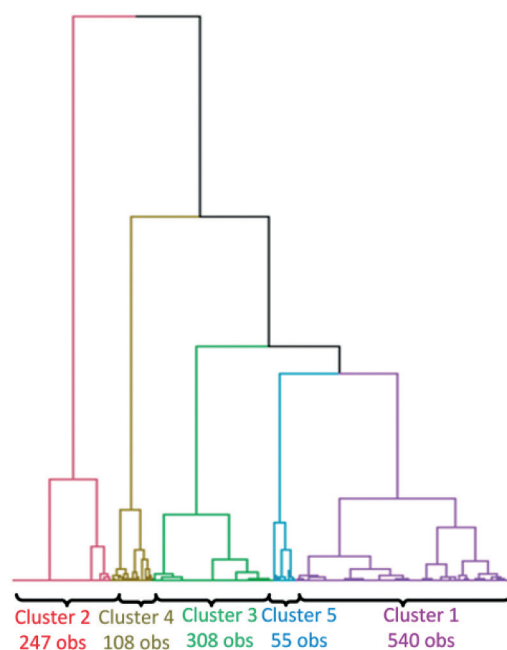
As already mentioned in Chapter 4 above, the project dataset comprised very heterogeneous film data, which was also true regarding film producers. 65 % of the producers in the project dataset were engaged in the creation of one film only. Many of the film producers in the dataset were ephemeral entities set up only to deliver a particular film project. In order to avoid blurring the overall picture with such cases, the cluster analysis was conducted on the subset of producers that participated in the delivery of at least one film adaptation based on the public domain content, and that were involved in the production of more than one film during the analysed period. Those criteria were met by 1 258 producers.

'Cluster analysis' is a generic term referring to techniques for accomplishing the task of partitioning a set of objects into relatively homogenous subgroups based on the similarities between them. The clustering algorithm begins with measuring each of the objects (film producers in the present case) on each of the variables of interest. Next, the similarity or, alternatively, the difference between each pair of objects must be measured. Then, a set of rules are employed to identify clusters of objects, displaying the smallest and largest possible within cluster variations (Kachigan, 1991).

Three variables were taken into account for the formation of clusters: the percentage of productions based on public domain content; the overall number of films produced during the project period; and the number of films among the 1 000 most popular films.

There is a large variety of possible algorithms for forming clusters. For the project purpose, hierarchical clustering was chosen. Within the hierarchical clustering algorithms, clusters are formed sequentially in a hierarchical manner. Objects are grouped into various clusters at different stages depending on their degree of similarity (Kachigan, 1991). The faster clusters are combined together, the more similar they are. For instance, analysis of Figure 13 below suggests that the largest Cluster 1 is more similar to Cluster 5 and then to Cluster 3. Cluster 2 combined with all the other clusters at a relatively late stage; this suggests that it groups film producers that are most dissimilar to typical observations in the dataset.

[Figure 13: Results of cluster analysis of the film producers using public domain content for adaptations](#)



Five clusters were identified within the dataset. As far as public domain content is concerned, the most interesting clusters are Clusters 2 and 4. As already discussed above, the film producers grouped within these two clusters are also quite different from the typical film producers in the dataset.

## Cluster 2 — Intensive users of adapted and public domain content

Cluster 2 consists of 247 entities (both private and public) with a very specialised focus on the production of adapted content. Many of those companies' productions are based on classic dramas and operas, which are broadcast on TV and in cinemas. Typical representatives of this cluster are BBC Drama Productions, BBC children's drama (CBBC), Opera National de Paris, Royal Opera House, Bel Air Media or François Roussillon et Associés.

On average, producers grouped in this cluster were involved in relatively fewer projects<sup>121</sup>. This cluster has the highest propensity to use adapted content (67 % of their production is based on adapted content), which consists mainly of public domain works (58 % of their production). Productions of the entities grouped under Cluster 2 almost never make it to the list of the most popular films as measured by the presence in the ranking of the most attended cinema offerings.

## Cluster 4 — Producers of the popular films

This cluster consists of the relatively bigger entities focused on the production of commercial films. Typical representatives of this cluster are Warner Bros., Miramax, Universal Pictures, Pathé, or Zespół Filmowy 'Kadr'. Interestingly, there are also representatives of the financial sector who provide co-financing for film projects. One example of such an institution is the Bavarian Bank Fund (Bayerischer Bankenfonds (BBF)) which provides gap financing in the form of a public-private partnership. It was established in 2000 by four Bavarian financial institutions<sup>122</sup>.

Film producers grouped within this cluster on average are engaged in more than two film projects annually, with at least one of them present in the list of the 1 000 most popular films of the period. They are intensive users of adapted content; over 40 % of their film productions are based on previous creative works, with approximately a third of it already present in the public domain.

## Cluster 5 — Huge producers of film content

Cluster 5 consists mainly of the public broadcasters and film academies. Typical representatives of this cluster are the BBC, ZDF, Telewizja Polska, Canal+, Film and TV School of Academy of Performing Arts in Prague (FAMU) or Hochschule für Medien Köln (KHM).

<sup>121</sup> - Within this cluster there is also a group of producers with a short business activity period and a few projects based on public domain adaptations.

<sup>122</sup> - 'European Film Production Banking Schemes. Neighbouring Banks Meet Film Producers' publication prepared for 21st Ljubljana International Film Festival, 2010.



A typical representative of this cluster was involved in almost 290 film projects during the analysed periods. It has a relatively higher share of exclusive TV productions. Producers grouped in Cluster 5 are not focused on popular cinema films, although some of their films were among the 1 000 most viewed films. This cluster has a relatively smaller propensity to use adapted content, regardless of its protection status.

Characterisation of the film producers grouped in Clusters 1 and 3 is more difficult as both clusters are more heterogeneous than the three described above.

### Cluster 3 — Smaller TV broadcasters and niche cinema producers

The group of entities within this cluster includes 3 SAT, Bulgarian National Television, Jim Henson Company, RAI, some smaller private film producers and some public bodies co-financing films' productions like Xunta de Galicia or Investment Incentives for the Irish Film Industry.

On average, they produce less than one film per year. Their films almost never make it to the list of the 1 000 most popular films. They have a relatively high share of short films (14 %) and exclusive TV productions (23 %) in their portfolio. They use adapted content quite intensively (39 % of their productions), with works that are already in the public domain constituting 26 % of their film productions.

### Cluster 1 — Other users of public domain content

Cluster 1 is the most heterogeneous cluster with the largest number of producers. It contains the smaller branches of the big studios like Warner Bros. Japan or Walt Disney Television Animation, Sony Pictures Television, some public TV broadcasters like TV2 Denmark, TV4 Sweden. There are also public institutions such as Polski Instytut Sztuki Filmowej (Polish Film Institute), Nederlandse Programma Stichting, UK National Lottery.

On average, film producers grouped under Cluster 1 are involved in three film productions per year, but very rarely do those productions reach the list of the most popular cinema productions (2 %). Adaptations amount to 24 % of their films with 7 % of their production being based on content already in the public domain.

## 6. PRIVATE RETURN ON THE ADAPTATION STRATEGY

DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS

As discussed in Chapter 2, Section 2.3.2 above, the adaptation of a previous work may be a potential strategy to reduce uncertainties for film producers. In order to check whether there is a premium for using protected or public domain content as a basis for film adaptations, an econometric model given by the following equation was estimated:

$$\log(\text{national attendance}) = \alpha + \beta_1 \text{ film type} + \beta_2 \log(\text{budget}) + \beta_3 \text{ local producer} + \beta_4 \text{ local producer} * \text{film type} + \beta_5 \text{ no markets} + \delta \text{ controls} + \varepsilon \quad (1)$$

Table 13: Descriptive statistics for the national attendance model — restricted sample

Statistic	No.	Mean	St. Dev.	Min	Max
National cinema admissions (th)	51 266	180.2	614.25	1	20 488
Entirely original screenplay	51 266	0.699	0.459	0	1
Public domain based screenplay	51 266	0.026	0.158	0	1
Screenplay based on protected content	51 266	0.276	0.447	0	1
Local film producer	50 871	0.140	0.347	0	1
Local producer adapting public domain content	50 871	0.004	0.065	0	1
Local producer adapting content protected by copyright	50 871	0.036	0.186	0	1
Budget (th. USD)	32 404	41 288.9	44 415.2	3	300 000
Budget (th. 2000 USD)	32 404	36 124.5	38 221.9	2.5	249 204
Years of experience of producer	50 871	42.1	30.9	0	115
Number of national cinema markets film was available	51 266	12.9	7.3	1	26

As shown by Column 1 of Table 14 below, the results of the naïve model, regressing cinema attendance on the type of content the film is based on implies a substantial premium for films based on previous creative works, be it protected by copyright or works in the public domain. This substantial premium decreases, however, when more control variables are added to the models such as the budget of the film (Column 2), the experience of the film producer, the

number of European countries the film was shown in, the production years dummies and the genre dummies (Column 3). Model 3 implies a general attendance premium for film adaptations, both based on content protected by copyright as well as content in the public domain.

The introduction of controls for whether a local producer is engaged in the production of a film (Columns 4 and 4a<sup>123</sup>) changes the results of the estimation. There is a strong audience preference to attend the film productions of local film producers for all types of films. Engagement of the local producer increases the expected number of cinema-goers by almost a factor of four in the country if the film is based on an original script. An additional premium can be expected, however, if the local producer is engaged in the adaptation of the previous creative content. Although in Model 4 the coefficient for public domain based content adapted by a local producer is higher than the coefficient for content protected by copyright, the difference between the two coefficients is not statistically significant from zero.

The introduction of the local producer's engagement variable changes the interpretation of the results for foreign film producers, which is a base reference in Model 4. The coefficient of the adaptation of content protected by copyright is still positive and statistically significant. However, the coefficient for public domain content becomes insignificant at the 95 % confidence level. This means that foreign producers may expect around 5 % increase in the cinema audience if they base their film production on pre-existing content that is still under copyright protection, but they cannot expect a similar premium if they use public domain content as a basis for their production. A premium from the adaptation of public domain content accrues only to local producers.

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123 - Column 4a presents the same model as Column 4 with robust standard errors.

Table 14: Results of the econometric model of national cinema attendance in the Member States of the European Union — restricted sample

	Dependent variable: log of cinema attendance				
	(1)	(2)	(3)	(4)	(4a)
based on public domain content	0.504*** (0.060)	0.168*** (0.059)	0.176*** (0.052)	0.086 (0.054)	0.086* (0.049)
based on protected content	0.529*** (0.021)	0.090*** (0.022)	0.092*** (0.020)	0.053*** (0.020)	0.053*** (0.019)
domestic producer				1.343*** (0.039)	1.343*** (0.054)
domestic, under pd				0.438*** (0.161)	0.438** (0.215)
domestic, under copyright				0.257*** (0.066)	0.257*** (0.090)
log of budget		0.628*** (0.006)	0.215*** (0.008)	0.245*** (0.007)	0.245*** (0.010)
years of experience			0.001* (0.0003)	-0.00005 (0.0003)	-0.00005 (0.0003)
no of markets			0.155*** (0.002)	0.167*** (0.002)	0.167*** (0.002)
Constant	9.566*** (0.046)	-0.164** (0.112)	4.516*** (0.126)	3.806*** (0.123)	3.806*** (0.154)
market dummies?	Yes	Yes	Yes	Yes	Yes
prod year dummies?	No	No	Yes	Yes	Yes
genre dummies?	No	No	Yes	Yes	Yes
Robust standard errors?	No	No	No	No	Yes
Observations	51 266	32 404	32 320	32 320	32 320
R2	0.178	0.412	0.559	0.584	0.584
Adjusted R2	0.178	0.412	0.558	0.583	0.583
Residual Std. Error	2.143 (df = 51 238)	1.744 (df = 32 375)	1.512 (df = 32 259)	1.468 (df = 32 256)	1.468 (df = 32 256)
F Statistic	411.449*** (df = 27; 51 238)	810.948*** (df = 28; 32 375)	680.932*** (df = 60; 32 259)	719.087*** (df = 63; 32 256)	719.087*** (df = 63; 32 256)

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

The limitations of the box office revenue data have already been discussed in Chapter 4 above. Box office revenue is available for a lower number of films as compared to the attendance data; also, the revenue from the home market of the film producer cannot be easily distinguished<sup>124</sup>. These caveats limit the number of questions that can be answered with the help of the data. Nevertheless, these data can be used for the robustness check of our findings from the main model.

$$\log(\text{box office revenue}) = \alpha + \beta_1 \text{ film type} + \beta_2 \log \text{bud} + \delta \text{controls} + \varepsilon \quad (2)$$

Table 15: Descriptive statistics of variables of the box office revenue model — restricted sample

Statistic	No.	Mean	St. Dev.	Min	Max
Box office (th. USD)	5 791	35 383	100 626	4.000	1 119 929
Box office (th. USD 2000)	5 791	30 966	87 508	3.211	1 048 107
Entirely original screenplay	5 791	0.752	0.432	0	1
Public domain based screenplay	5 791	0.023	0.151	0	1
Screenplay based on protected content	5 791	0.225	0.418	0	1
Budget (th. USD)	3 155	25 890	35 489	6	300 000
Budget (th. 2000 USD)	3 155	22 749	30 797	4.738	249 204
Years of experience of producer	5 673	32	29	0	115

The results of such a test are presented in Table 16 below. As can be seen in Column 1, the results of the naïve model that do not take into account important aspects that contribute to film success, imply big box office premiums from using the adapted content as a base of the film. However, when more control factors are introduced to the model, such as film budget (Column 2), the years of experience of the producer and production years dummies (Column 3) and film genres (Column 4), the results of the public domain dummy become insignificant. Conversely, the results of the dummy for content protected by copyright stay significant and imply a 24 % premium for using this content as a basis for film adaptation. Due to the data limitations discussed above, the local producer effect cannot be controlled in the box office model. It is, therefore, not possible to confirm the results of the national cinema attendance results, which suggest that the public domain premium appears only for the local producers.

124 - For some films only the worldwide box office without a breakdown into the separate countries was available.

Table 16: Results of the econometric model of the box office revenue — restricted sample

	(1)	(2)	(3)	(3a)
based on public domain content	0.641** (0.266)	0.048 (0.243)	-0.094 (0.240)	-0.094 (0.208)
based on protected content	0.984*** (0.097)	0.217** (0.092)	0.224** (0.092)	0.224*** (0.086)
log of budget		1.093*** (0.022)	0.933*** (0.026)	0.933*** (0.045)
years of experience			0.014*** (0.001)	0.014*** (0.001)
Constant	13.943*** (0.046)	-2.100*** (0.349)	0.266 (0.425)	0.266 (0.717)
prod year dummies?	No	No	Yes	Yes
genre dummies?	No	No	Yes	Yes
Robust standard errors?	No	No	No	Yes
Observations	5 791	3 155	3 122	3 122
R2	0.018	0.450	0.499	0.499
Adjusted R2	0.018	0.450	0.493	0.493
Residual Std. Error	3.059 (df = 5 788)	2.201 (df = 3 151)	2.106 (df = 3 087)	2.106 (df = 3 087)
F Statistic	53.087*** (df = 2; 5 788)	861.051*** (df = 3; 3 151)	90.362*** (df = 34; 3 087)	90.362*** (df = 34; 3 087)

## 7 CONCLUDING REMARKS

DERIVATIVE USE OF PUBLIC DOMAIN CONTENT — FILM INDUSTRY FOCUS

### 7.1 DISCUSSION OF THE RESULTS

Films adapting public domain works attract approximately 4 % of all cinemagoers to European cinemas. Attendance for such cinematographic adaptations is almost 10 times lower than attendance for films based on content protected by copyright and 15 times lower than attendance for films based on original screenplays. Taken at face value, statistics of the share of public domain adaptations among all the films released in Europe may confirm risks related to the public domain status discussed in previous literature. Present analysis suggests, however, that those risks are not the main causes of the relatively lower popularity of public domain content compared with content that is still under copyright protection.

Starting from the fifth year following first publication, a rapid exponential decline in the economic value of creative content for derivative purposes can be observed. It affects all but the most important masterpieces of human creation with perennial value for the cultural audience. As a consequence, the change of protection status, which in the majority of countries is set currently at 70 years pma, is not the important threshold that could affect profoundly the film adaptation market. Approaching the end of copyright protection increases film producers' interest in adaptation, but this interest is limited to the few creative works that still preserve their value for contemporary readers. Relative interest in the adaptation of works created several generations ago is much lower than film producers' interest in adapting recent bestsellers, even if they have to pay a licence for derivative use.

Analysis of the dataset has demonstrated that arguments stressing the risks of under- or over-exploitation of public domain content for derivative purposes are not well founded. The rate of exploitation of public domain works by the film industry is slightly higher for public domain content than for content protected by copyright; yet, the majority of literary works have been adapted only once regardless of their copyright protection status. Possible use of the same content by others does not discourage producers from investing substantial sums of money in films based on public domain content. Public domain based film adaptations have higher budgets than films based on entirely original screenplays and the difference is statistically significant.

Cluster analysis has shown that there are film producers that make public domain content a substantial part of their value proposition; established, well-known film producers use public domain content more frequently than the average film producer in the dataset.

Models considering national cinema attendance (Table 14, above) and box office revenue (Table 16, above) confirm hypotheses stated in the previous literature that film adaptations, in some circumstances, may be an effective strategy in reducing uncertainties and increasing the economic return on films. Existence of the economic premium has been confirmed for film adaptations based on protected content both in terms of national cinema attendance and in box office revenue.

Results for films based on the public domain content are, however, more ambiguous. The results indicate that additional cinema attendance is associated with public domain adaptations prepared by local film producers as compared to the expected number of viewers of their productions based on entirely original screenplays. It was not possible to confirm, however, either that these benefits extend beyond national borders of their country seat or that there is a general premium in terms of box office revenue associated with the adaptation of public domain content.

The results of the econometric models suggest thus that the exclusivity of adaptation rights associated with content protected by copyright may bring additional benefits as compared with the adaptation of public domain content. However, as discussed in Chapter 5 above, the social price for this additional private premium may be lower variety offered to the audience of adaptations of the content protected by copyright.

## 7.2 LIMITATIONS OF THE STUDY AND INDICATIONS FOR FUTURE RESEARCH

One of the main contributions of the present report is an empirical description of patterns of usage of public domain content for contemporary creative projects in the film market and an analysis of the private benefits accruing to film producers using this type of content for their projects. The possible benefits stemming from the adaptation of public domain content but also factors that may diminish the attractiveness of the creative transformation of public domain content from a purely private point of view have been identified in the report.

There are three major aspects in which adaptations based on protected and on public domain content differ:

- licence fees and additional administrative costs associated with the clearance of copyright, which potentially reduces the propensity to adapt protected content and increases the attractiveness of the public domain;
- time since the first publication, which reduces the propensity to adapt public domain content but increases the attractiveness of the protected content;
- possibility to secure exclusive rights for adaptations, which reduces the propensity to adapt public domain content but increases the attractiveness of the protected content.



Over the course of the present project two latter aspects were included in the analysis. However, a lack of data on licence fees and administrative costs that copyright clearance entails was the major limitation of the study. Its availability could potentially increase the robustness of the findings regarding the economic decline in the value of creative content for adaptation or differences in the films' budgets.

The analysis of the temporal patterns of film adaptations is one of the major contributions to the present study. It indicates that after an initial peak there is a rapid decline in the probability of use of creative work as a basis for adaptation. For some works at the margin, that are not adapted in the first few years following first publication, the cost of licence fees may be the decisive factor that discourages film producers from investing in adaptation, even if the works are still potentially attractive for the audience. A general trend of rapid decline in the economic value makes them unattractive base material when their protection status changes. As a result, such works are never adapted into films. Authors of such books might, however, have benefited from additional sales of their books if the film adaptation had been made and it had proved to be a success. Investigating this hypothesis requires gathering data on the impact of copyright licence fees on the propensity to adapt and data on the impact of film adaptations on book sales. If such a relationship is confirmed, it would be a very interesting extension to the findings of the current report. It may encourage new creative commons type licences, by which authors would allow derivative uses of their work after a certain time period and without affecting the exploitation of the base work itself. Other contractual practices, such as transfers of adaptation rights from authors to derivative rights holders may also be considered.

The film market has undergone in recent years a profound structural change, which has resulted also in a change of the relative importance of different revenue streams. One of the assumptions of the study is that the proxies used for film success, the number of viewers in European cinemas and box office revenue, determine to some extent the overall financial prospects of films and there are no major differences between the relative importance of various revenue streams between films based on original scripts, adaptations based on previous content protected by copyright and adaptations based on public domain content. It is possible, however, that licensed merchandise, such as toys, t-shirts, stationery items, play a more important role for the overall financial revenue of films based on public domain or protected content than films based on entirely original scripts. Data gathered for the project makes it impossible to check this conjecture; however, the inclusion of such data may potentially change the results of the impact analysis of adaptation strategy on film financial success.

Due to the legacy legislation there are some works still protected by copyright in some countries that have public domain status in others. Thus there is a theoretical possibility to analyse the use of content with a different protection status in different countries. Specific features of the film market, such as high costs leading to relatively lower number of projects and higher

propensity to use recent content make it impossible to gather enough data meeting the criterion of different protection statuses in different countries; however, it could be possible to produce a dataset with such characteristics on other subsets of the cultural market. Such a setting creates potential for the natural experiment analysis, which could bring stronger evidence as regards the impact of public domain status on the propensity of non-derivative and derivative use of content.

Due to the data limitations, possible additional benefits accruing to a wider audience stemming from a greater variety of offer are identified but not properly operationalised or tested. Devising new constructs allowing for the proper measurement and assessment of the full private and social costs and benefits of current regulations stipulating the derivative use of pre-existing content would be thus a much welcomed addition to our knowledge about the workings of current copyright system.

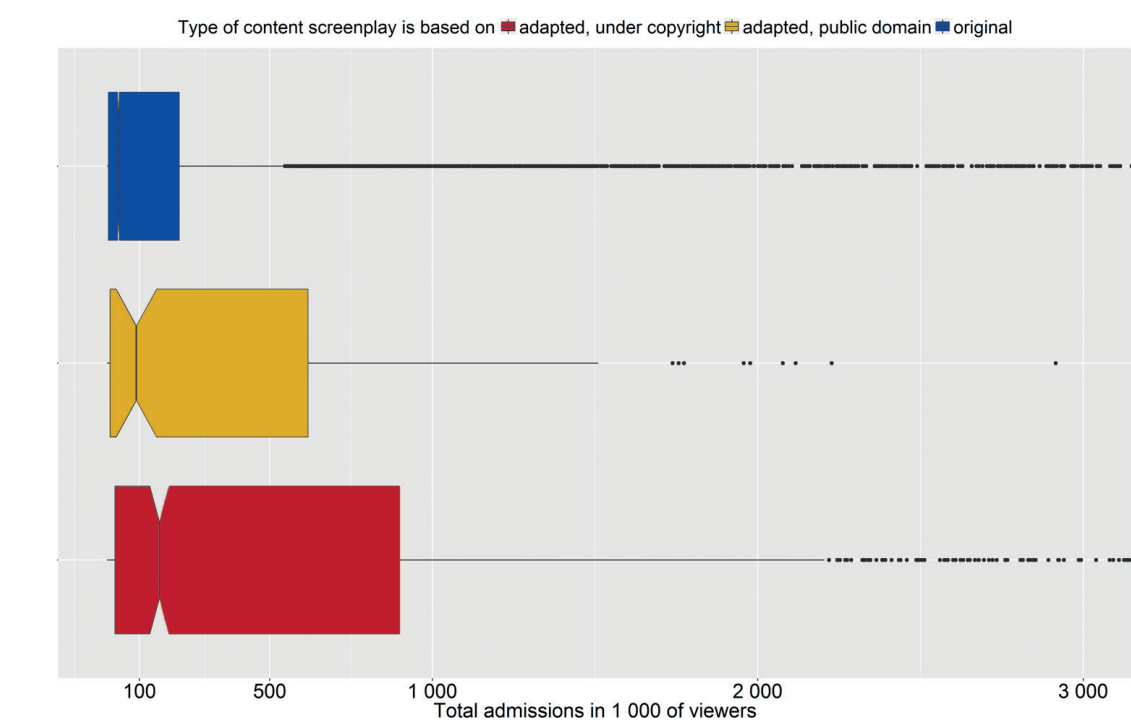
# 8. ANNEX – REPETITION OF SELECTED ANALYSES WITH FULL SAMPLE



Table 17: Share of the adapted films in the full sample

Type of films	Share in the sample
Adaptations	7.1 %
Public domain based adaptations	1.3 %
Public domain based among all adaptations	18.5 %

Figure 14: Distributional properties of total admissions to European cinemas — full sample (number of viewers in all national markets of the EU measured in thousands)<sup>125</sup>



125 - For visibility, the plot is limited to 3 million viewers.

[Table 18: Summary statistics for number of viewers \(in thousands\) broken down by film categories based on screenplay type — full sample](#)

	Original content	Adapted, public domain	Adapted, under copyright protection
Number of observations	9 396	238	2 053
1st quartile	4.71	9.72	24.65
Median number of viewers	34.87	90.07	161.2
Mean number of viewers	618.50	1 395	1 605
3rd quartile	221.30	617.4	898
Max number of viewers	75 140	27 340	58 400

The non-parametric Games-Howell test confirmed that the differences between films based on entirely original screenplays and films based on content protected by copyright, and between films based on entirely original screenplays and films based on the public domain are statistically significant at the 95 % significance level. The difference between films based on protected content and public domain content is not statistically significant.

[Table 19: Summary statistics for film budgets — full sample](#)

	Original content	Adapted, public domain	Adapted, under copyright
Number of observations	21 659	276	1 577
1st quartile	2.90	64.17	1 059
Median budget	18.72	1 509	4 799
Mean budget	2 698	12 410	17 900
3rd quartile	552.8	9 632	20 500
Max budget	249 200	160 500	230 600

The difference of mean budgets in a pairwise comparison between all three groups is statistically significant, as confirmed by the post-hoc, non-parametric Games-Howell test.

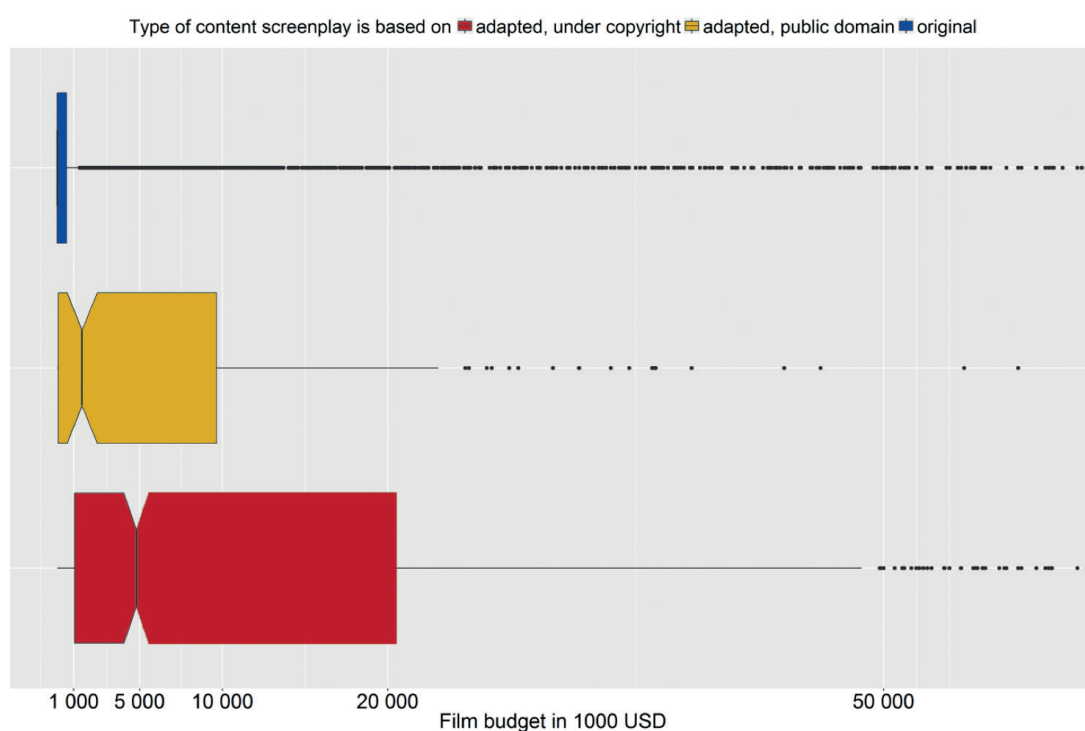
Figure 15: Distributional properties of film budgets — full sample<sup>126</sup>

Table 20: Descriptive statistics for the national attendance model — full sample

Statistic	No.	Mean	St. Dev.	Min	Max
National cinema admissions (th)	54 988	171 636.9	597 078.4	1	20 488.3
Entirely original screenplay	54 988	0.719	0.449	0	1
Public domain based screenplay	54 988	0.024	0.152	0	1
Screenplay based on protected content	54 988	0.257	0.437	0	1
Local film producer	54 319	0.170	0.376	0	1
Local producer adapting public domain content	54 319	0.004	0.063	0	1
Local producer adapting content protected by copyright	54 319	0.033	0.18	0	1
Budget (th. USD)	33 086	40 491.3	44 300	0	300 000
Budget (th. 2000 USD)	33 086	35 425.5	38 134	0	249 204
Years of experience of producer	54 319	40.9	30.8	0	115
Number of national cinema markets film was available	54 988	12.2	7.6	1	26

126 - For visibility purposes, the plot is limited to USD 50 million.

Table 21: Results of the econometric model of the national cinema attendance in the Member States of the European Union- full sample

	Dependent variable: log of cinema attendance				
	(1)	(2)	(3)	(4)	(4a)
based on public domain content	0.653*** (0.062)	0.184*** (0.060)	0.171*** (0.053)	0.091* (0.055)	0.091* (0.049)
based on protected content	0.678*** (0.022)	0.106*** (0.022)	0.090*** (0.020)	0.058*** (0.020)	0.058*** (0.019)
local producer				1.352*** (0.036)	1.352*** (0.051)
local producer, under pd				0.435*** (0.163)	0.435** (0.213)
local producer, under copyright				0.258*** (0.066)	0.258*** (0.088)
log of budget		0.610*** (0.006)	0.204*** (0.007)	0.238*** (0.007)	0.238*** (0.010)
years of experience			0.001** (0.0003)	0.0001 (0.0003)	0.0001 (0.0003)
no of markets			0.152*** (0.002)	0.167*** (0.002)	0.167*** (0.002)
Constant	9.415*** (0.046)	0.139 (0.108)	4.733*** (0.122)	3.909*** (0.120)	3.909*** (0.153)
market dummies?	Yes	Yes	Yes	Yes	Yes
prod year dummies?	No	No	Yes	Yes	Yes
genre dummies?	No	No	Yes	Yes	Yes
Robust standard errors?	No	No	No	No	Yes
Observations	54 988	33 086	32 970	32 970	32 970
R2	0.165	0.408	0.552	0.578	0.578
Adjusted R2	0.164	0.407	0.551	0.578	0.578
Residual Std. Error	2.193 (df = 54 960)	1.768 (df = 33 057)	1.539 (df = 32 909)	1.492 (df = 32 906)	1.492 (df = 32 906)
F Statistic	401.870*** (df = 27; 54 960)	812.232*** (df = 28; 33 057)	674.486*** (df = 60; 32 909)	716.358*** (df = 63; 32 906)	716.358*** (df = 63; 32 906)

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

Table 22: Descriptive statistics of variables of the box office revenue model — full sample

Statistic	N	Mean	St. Dev.	Min	Max
Box office (th. USD)	6 157	33 401.5	97 936	4.000	1 119 929.5
Box office (th. USD 2000)	6 157	29 232.6	85 176.7	3.211	1 048 107.96
Entirely original screenplay	6 157	0.766	0.423	0	1
Public domain based screenplay	6 157	0.022	0.147	0	1
Screenplay based on protected content	6 157	0.212	0.408	0	1
Budget (th. USD)	3 241	25 280.7	35 214.4	6	300 000
Budget (th. 2000 USD)	3 241	22 210.7	30 564.5	4.738	249 204
Years of experience of producer	6 012	31	29	0	115

Table 23: Results of the econometric model of the box office revenue — full sample

	Dependent variable: log of box office revenue			
	(1)	(2)	(3)	(3a)
based on public domain content	0.797***	0.076	-0.073	-0.073
	(0.266)	(0.244)	(0.240)	(0.207)
based on protected content	1.140***	0.246***	0.249***	0.249***
	(0.096)	(0.092)	(0.092)	(0.086)
log of budget		1.085***	0.921***	0.921***
		(0.021)	(0.025)	(0.043)
years of experience			0.015***	0.015***
			(0.001)	(0.001)
Constant	13.787***	-1.985***	0.372	0.372
	(0.045)	(0.337)	(0.411)	(0.671)
prod year dummies?	No	No	Yes	Yes
genre dummies?	No	No	Yes	Yes
Robust standard errors?	No	No	No	Yes
Observations	6 157	3 241	3 205	3 205
R2	0.023	0.458	0.508	0.508
Adjusted R2	0.023	0.457	0.502	0.502
Residual Std. Error	3.062 (df = 6 154)	2.209 (df = 3 237)	2.110 (df = 3 170)	2.110 (df = 3 170)
F Statistic	72.863*** (df = 2; 6 154)	911.780*** (df = 3; 3 237)	96.122*** (df = 34; 3 170)	96.122*** (df = 34; 3 170)

Note: \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

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