



## **The economics of copyright term extension**

**A review of the economic submissions regarding the extension of copyright for sound recordings**

**29 May 2007**

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## 1 Introduction and summary

### Introduction

- 1.1 Recently, a debate has taken place within Europe as to the case for extending the copyright on sound recordings. In particular, this matter is being considered by the European Commission, and consequently it is also being reviewed by individual member states, including the UK.
- 1.2 A variety of submissions have been made to the various governmental and quasi-governmental bodies from interested parties. These have included several submissions by economic consultants.
- 1.3 LECG has been asked to review the various economic analyses that have been submitted to the European Commission, and to the Gowers Review in the UK, and to provide our own analysis of the potential economic implications of an extension of the copyright term. In particular, we have been asked to consider:
- The extent to which an extension of the copyright term may result in a loss to consumers;
  - The extent to which creators would gain from an extension of the copyright term; and
  - The impact on overall social welfare as a result of an extension in the copyright term.

### Scope of work performed

- 1.4 In the course of our analysis we have reviewed the submissions by five economic consultants / consulting firms. These submissions are:
- A report by Professor Stan J. Liebowitz, titled "*What Are The Consequences Of The European Union Extending Copyright Length For Sound Recordings?*" ("the Liebowitz report")
  - A report by the Institute for Information Law, written by Bernt Hugenholtz and others, titled "*The Recasting of Copyright & Related Rights for the Knowledge Economy*" ("the Hugenholtz report")

- A report by Professor Joseph Lampel, titled “*Back to the Digital Future: The Role of Copyrights in Sustaining Creativity and Diversity in the Music Industry*” (“the Lampel report”)
- A report by the Centre for Intellectual Property and Information Law, titled “*Review of the Economic Evidence Relating to an Extension of the Term of Copyright in Sound Recordings*” (“the CIPIL report”)
- A report by PwC, titled “*The Impact of Copyright Extension for Sound Recordings in the UK*” (“the PwC report”)

1.5 We have focused on the economic arguments put forward in each of these reports. Therefore, our work has covered certain of the reports in more detail than others. For example, the Lampel report is a strategic review of the music industry, which focuses on the different business models that might emerge as digital music becomes more prevalent. Whilst this report provides a helpful insight into the potential development of the industry, it does not cover in detail the likely economic outcomes of a copyright term extension. Our review of this report has therefore been more limited than in relation to other reports, such as the CIPIL and Liebowitz reports, which contain more in-depth economic models. We refer collectively to the economic content of the reports listed above as “The Economic Submissions”.

### **Summary of main findings**

1.6 Having reviewed the Economic Submissions, we believe that the available evidence suggests an extension of the copyright term is likely to benefit consumers rather than harm them and that overall social welfare is also likely to be increased. Further, based on a review of the academic literature and the available empirical evidence on record company investment behaviour (which suggests new music is, in fact, financed out of current earnings) there are strong grounds to believe that a retrospective increase in the copyright term will enhance these benefits.

### **Choice of economic model**

1.7 In reaching our conclusions, we reviewed the economic model that has been used by CIPIL (and to a lesser extent Hugenholtz) and concluded that it does not appear to fit with the facts that we have seen. This theoretical model is a vertical model of ‘take it or leave it’ competitive interaction between content creators, retailers and consumers. A core assumption underpinning the ‘take it or leave it’

model is that absent copyright, consumer prices would fall and therefore that an extension of the copyright term would lead to a decrease in the welfare of customers.

- 1.8 In fact, the only empirical data that we have seen on the impact of copyright on the consumer price of recorded music shows that there is no statistically significant difference between UK average prices of copyright records and UK average prices of non-copyright records.<sup>1</sup> This price equivalence holds true both for traditional record sales through physical retailers, but also for online retailers like iTunes. The absence of such a difference contradicts the main theoretical prediction of the 'take it or leave it' model and therefore casts significant doubt on its validity as a way of explaining how the recorded music industry operates.
- 1.9 Our review of the value chain for the recorded music industry suggests that an alternative economic model, one based on "bargaining" is likely to be more appropriate.<sup>2</sup> This model appears more relevant to the actual structure of the industry (where both large record companies and major retailers have an element of market power) and better fits the empirical data that we have seen.
- 1.10 Whilst this issue has not, so far, been tested more widely in Europe, the structure of the market in other European countries outside the UK appears sufficiently similar to hypothesise that an equivalent model is likely to be valid in Europe as well as the UK.
- 1.11 Using a bargaining-based model, an extension of the copyright term does not necessarily result in a change in the price to consumers, and so there would not be a consumer loss. Rather, value may be shifted between different constituents of the value chain, with the owners of the sound recording copyright receiving more of the end consumer price than they would if no copyright existed.

#### **Calculations of overall social welfare**

- 1.12 In addition to our review of the basic economic models contained in the Economic Submissions, we also reviewed the specific calculations of overall social welfare that are set out in the CIPIL report. No such calculations have been made in any of the other Economic Submissions.

- 1.13 In order to consider the model that has been used by CIPIL to calculate the overall impact on social welfare from an extension of the copyright term, it is first necessary to correct a basic error that has been made in their analysis.
- 1.14 In simplifying the formula for calculating the effect of a term extension, CIPIL have substituted in one of the terms incorrectly. The effect of this incorrect substitution is to render the copyright term meaningless in their calculation. Therefore extending the term indefinitely gives the same result as eliminating copyright entirely (that is reducing the term to zero).
- 1.15 After correcting for this error in the formula contained in the CIPIL report, we find that their calculation is highly sensitive to small changes in the values of the parameters they have chosen. Small changes, still within the parameter values CIPIL quotes, can lead to their model producing results that indicate an increase in copyright term leads to welfare increasing.
- 1.16 The potential range of these parameters is, even on the basis put forward by CIPIL, significant and certain of the other Economic Submissions estimate values for particular key parameter values that fall far outside the ranges put forward by CIPIL. Further, CIPIL themselves indicate that they have limited, or in some cases no, evidence to support the choice of particular estimates. Therefore, we do not believe that the calculations put forward by CIPIL can be used to inform any decision about whether the copyright term should be extended, particularly when their analysis conflicts with other, empirical, evidence.

#### **Retrospective changes to the copyright term**

- 1.17 Given that the bargaining model predicts no loss to consumers, an extension of the copyright term should therefore result in an increase in the incentives to create music without any meaningful costs to consumers.
- 1.18 However, a critical factor in determining whether a retrospective extension<sup>3</sup> is likely to result in an increase in future music creation is the question of whether

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<sup>1</sup> The comparison made by PwC is between copyright-protected and out-of-copyright protected sound recordings made in the period 1950 – 1958. In our view, this is an appropriate comparison because it adjusts for differences in current popularity, which may affect prices.

<sup>2</sup> See footnote 24 on page 20 for a discussion of the development of bargaining models in the economic literature.

<sup>3</sup> In considering the case for a “retrospective extension”, we have considered that this would mean an extension to the copyright term for those sound recordings that are currently still within the existing copyright term, but it would not apply to sound recordings that have already fallen out of copyright.

current earnings affect the level of investment in future content creation. Both CIPIL and PwC refer to the basic theory that if record companies are acting rationally then they should invest in all NPV positive opportunities, borrowing where necessary if retained funds are not sufficient. This leads to an hypothesis that whilst the incentive properties associated with an extension of the copyright term might result in an increase in the level of music being created, a retrospective extension would have no impact on the amount of music being created.

- 1.19 We have considered the academic literature relating to the efficiency of capital markets and the reasons why companies, when acting rationally, may choose not to borrow money to invest in specific opportunities. There are a variety of factors that explain why such behaviour may occur and, again, which are consistent with the nature of the recorded music industry.
- 1.20 In any event, how theoretical models predict record companies will act is less relevant than how they do act. Whilst there is a range of financial theories that support the hypothesis that record companies investment is driven by their current profitability, we have also tried to determine the way in which record companies actually act in practice. This is the real test of the impact that a retrospective extension would actually have on the level of music created.
- 1.21 We have obtained high level data on A&R spend and revenues for each of the four major record companies.<sup>4</sup> Our review of this data is consistent with the hypothesis that record companies, at least in the short term, finance new material from the sales of existing material and that, therefore, a retrospective increase in the copyright term is likely to have a positive effect on the level of recorded music created. This analysis is consistent with a recent survey by the BPI of independent record company members, which shows that independents rely heavily on internal funds for financing.

### **Structure of our report**

- 1.22 The remainder of this report is structured as follows.
- In Section 2, we consider the role of copyright in the recorded music industry;

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<sup>4</sup> EMI, Warner, SonyBMG, Universal.

- In Section 3, we consider the appropriate economic model for music copyright;
- In Section 4, we review the welfare calculations in the CIPIL report; and
- In Section 5, we review the literature on efficient capital markets and consider the actual investment patterns of record companies.

## 2 The role of copyright in the recorded music industry

### Introduction

- 2.1 An area that has not been discussed in detail in any of the Economic Submissions is the basic economic principles that justify the existence of copyright in the recorded music industry.
- 2.2 One potential reason for the omission of such an exposition is the belief that this is such a straightforward concept, and one with a shared understanding by all parties, that no exposition is necessary. However, we believe it is helpful in terms of the discussion that follows later in this report to briefly set out some of the basic concepts behind the economic rationale for copyright in the recorded music industry.

### The basic economics of copyright

- 2.3 Copyright provides owners of the copyrighted material with the opportunity to earn returns. These returns must obviously be generated at the expense of some other party in the industry value chain, whether (but not necessarily) the end customer or some other party.
- 2.4 As such, copyright constitutes a legally enforceable redistribution of wealth. The justification for this redistribution is that it provides creators of copyrighted material with an incentive to create material; this incentivisation is seen as having benefits to society. The link between the creation of incentives and copyright is a rudimentary concept that is well and widely understood and, not surprisingly, it is articulated in most basic economic texts.
- 2.5 For example, Landes and Posner (1989) in their seminal article on the economic theory of copyright law note that:

*For a new work to be created, the expected return [...] must exceed the expected cost. [...] Since the decision to create the work must be made before the demand for copies is known, the work will be created only if the difference between expected revenues and the cost of making copies equals or exceeds the cost of expression.<sup>5</sup>*

<sup>5</sup> Landes, William M, and Richard A, Posner. 1989. "An Economic Analysis of Copyright Law." *Journal of Legal Studies*, 18(2): 325-363, p.327.

- 2.6 This point is touched on briefly in the Liebowitz report, where he states that
- [...] if producers of nonrivalrous goods, such as the performance found on sound recordings, were to receive no revenue, then there is little reason to believe that production will occur at a rate anywhere near the efficient, to say nothing of ideal, level.<sup>6</sup>*
- 2.7 As Carlton and Perloff state in their widely used undergraduate textbook:
- The protection of intellectual property is needed to create incentives for creative efforts. [...] Patents, copyrights and trademarks are three important types of protection for intellectual property.<sup>7</sup>*
- 2.8 Akerlof and others (2002)<sup>8</sup> in their analysis of copyright extension in the U.S. note that:
- The main economic rationale for copyright is to supply a sufficient incentive for creation. To produce a new book, film, or other creative work, an author must make a substantial up-front investment. For the resulting work to be profitable overall, the author must recoup her initial investment through sales of the work to consumers. An economically minded author will recognize this and invest in creation only if expected returns, after paying per-unit (or "marginal") costs, are larger than the up-front investment; otherwise the author would lose money overall.*
- 2.9 As we will discuss later, whilst copyright confers a certain level of market power to the owner of the copyright, it does not, in the recorded music industry, create an effective monopoly due to the nature of product competition, something that is recognised in the Liebowitz report where it states:<sup>9</sup>
- Although copyright provides the copyright owner a monopoly on making copies, this does not mean that copyright provides an economically meaningful monopoly.*

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<sup>6</sup> Liebowitz report, p.6.

<sup>7</sup> Carlton, Dennis W. and Jeffrey M. Perloff. 2005. *Modern Industrial Organisation*. New York: Pearson Addison Wesley, p.526.

<sup>8</sup> Akerlof and others. 2002. The Copyright Term Extension Act of 1998: An Economic Analysis, p. 4.

<sup>9</sup> Liebowitz report, p.3.

**Maximising benefits to society from the copyright pay-off decision**

- 2.10 The granting of copyright imposes a condition on the market which results in a different distribution of value than would otherwise be the case. As such, the choice of the length of the copyright term determines how long the market operates in this way.
- 2.11 An active determination is therefore required by legislators in order to set the limit of the copyright such that the maximum benefits to society are achieved; this is a pay-off decision. What are the benefits of a redistribution of wealth? What are the costs of a redistribution of wealth? Who bears the costs? How do these costs / benefits change over time? What time period results in the highest benefit to cost differential?
- 2.12 The answer to the question as to what length of copyright term will maximise the benefits to society is very much a function of the nature of the industry in which the rights are being granted.
- 2.13 In order to model the potential costs and pay-offs, it is necessary to first consider the nature of the industry and to then select, or develop, an economic model that appears to fit with the known facts about the way in which that market operates.
- 2.14 In Section 3, we set out our analysis of the market for sound recordings and, based on that model, we discuss our views on how changes in the copyright term may affect the pay-offs of different parties within the industry and society as a whole.
- 2.15 It is important to note, however, that the optimal copyright term (from a societal perspective) may change if the nature of the market changes.
- 2.16 Whilst all markets go through regular and constant change, the recorded music industry is currently going through what is described in the Lampel report as “*revolutionary transformation brought about by digital technology*”.<sup>10</sup>
- 2.17 This “revolution” is changing the way in which consumers use recorded music, the way music is distributed, the business models adopted by parties in the industry

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<sup>10</sup> Lampel report, p.3.

and, not least, both the method through which returns on sound recordings are generated and the level of these returns.

- 2.18 Assuming that the current length of the copyright term was set at a level which was thought historically to maximise the pay-off decision, then any major changes in the overall returns from individual sound recordings suggests that policy makers should, at the very least, consider a review of the copyright term, on which the incentives are based.

### **A review of the pay-off equation in the Economic Submissions**

- 2.19 The pay-off equation has been considered in different ways in each of the Economic Submissions.

#### **Liebowitz report**

- 2.20 Liebowitz does not attempt to model the size of the potential loss to consumers or other parties in the industry and is focused primarily on estimating the size of the potential gains to producers. Whilst noting that the potential cost to consumers needs to be set against this producer benefit, Liebowitz states at page 22:

*There has been no empirical examination of the size of the additional costs imposed on consumers by copyright. In the vast majority of instances, copyright provides no monopoly power to the copyright owner and the only cost advantage that would accrue to consumers of non-copyrighted works, would be the savings in not having to pay the creator of the work. When actual monopoly power exists, it is the type of monopoly power that is associated with the unique individual abilities of the creators. In those instances where such monopoly power exists, irrespective of the fact that economic efficiency would be improved if such monopoly power were reduced, such reduction would be at variance with the treatment of this type of monopoly power elsewhere in the economy. Thus the size of the potential harm is completely unknown and the removal of this harm has not been thought to be sufficiently important to try to bring it about in other part [sic] of the economy. It is not clear, therefore, how much weight should be given to this potential cost in a society that has other goals beyond that of economic efficiency.*

**Lampel report**

- 2.21 The Lampel report does not seek to quantify the impact of changing (or not changing) the term of copyright on sound recordings. However, the Lampel report is the only one of the Economic Submissions that considers where the developments in the industry are likely to lead; in fact, this is the primary focus of the report. In his analysis, Lampel has developed a range of different scenarios describing potential futures for the industry. One of the primary conclusions arising out of the different scenarios is that, due to the changes which the industry is undergoing, without enhancements to the copyright regime the music industry will either stagnate or suffer major decline.

**CIPIL report**

- 2.22 The CIPIL report places considerable emphasis on the costs associated with copyright and it is only deep into their explanation of their formal model covering the aggregate analysis that CIPIL introduce the ability for copyright to increase social welfare. Elsewhere in the report, CIPIL downplays, or ignores, the benefits side of the pay-off equation.
- 2.23 For example, CIPIL refer to a diagram that outlines the trade-off between a right to copyright (monopoly) and no right to copyright (competition) stating that this is “*found in all introductory economic textbooks*”<sup>11</sup> and references Webb and Liebowitz. However our review of introductory economic textbooks shows that a discussion of the “basic economics of copyright” without discussing the impact copyright has on content creation is far from “standard”.
- 2.24 At the end of the basic theory section (and indeed later repeated in the paper) CIPIL’s two conclusions seem to singularly ignore the benefits of copyright by stating that: “*All increases in profits come from consumer surplus, There is a net loss (the deadweight loss).*”<sup>12</sup> Both these conclusions are incorrect when one considers the possibility that this rise in profits increases the incentives to create and generate new pieces of work. Later in the same section CIPIL again provide a false impression by stating:

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<sup>11</sup> CIPIL report, p.15.

<sup>12</sup> CIPIL report, p.16. and again repeated in p.40.

*[...] all increases in revenue come from consumer surplus and also entail deadweight loss. Hence, we know that if we increase revenue by increasing protection, T, overall welfare is reduced.<sup>13</sup>*

- 2.25 This one sided view of copyright continues to the numerical analysis. For example later in the report, in calculating the cost/ benefit to consumers of copyright, CIPIL separates the costs into a separate section (section 7), but only discusses the net benefits in the section entitled “*Social Welfare the overall picture*”.
- 2.26 In our view, any use of the term ‘*consumer surplus*’ must examine both the costs and benefits and not simply the costs as CIPIL have done in section 7.<sup>14</sup> Failure to do so gives the erroneous perception that there are only costs to consumers from copyright extension.
- 2.27 Accordingly, we believe the CIPIL report provides a partial analysis of the economics of copyright by failing to make explicit the central function of copyright protection (or protection of intellectual property in general): generation of incentives for creative work. On the contrary, the report appears to aim at portraying copyright protection as generally detrimental to overall welfare and simply a movement of consumer welfare to producer welfare. This is not the consensus of the economic literature.

#### **Hugenholtz report**

- 2.28 The Hugenholtz report recognises that the term of copyright protection ideally reflects a balance between incentives to create and the costs of protection. In its economic analysis it states that it intends to “...*weight the benefits of a term extension against the costs for society, including competitors, consumers and public welfare in general.*”<sup>15</sup> The report recognises that this trade-off is a challenging question:

*Until today, the law & economics literature has not succeeded in proving that a specific term of protection has the desired effect of creating optimal incentives to produce, create and invest.<sup>16</sup>*

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<sup>13</sup> CIPIL report, p.17.

<sup>14</sup> CIPIL mentions consumer surplus several times on p.40 in a discussion which does not consider the benefits.

<sup>15</sup> Hugenholtz report, p. 103.

<sup>16</sup> Hugenholtz report, p. 103.

**Conclusion**

- 2.29 Whilst each of the Economic Submissions' discussion of the pay-off equation reflects a different focus and perspective with more or less focus on the costs or benefits of copyright extension, in our view the CIPIL report, in particular, provides a somewhat one-sided view of the implications of copyright term extension.
- 2.30 We believe that any analysis of copyright extension needs to consider the costs and benefits whilst also reflecting the structure and nature of the music industry. This is discussed in more detail in section 3.

### 3 Economic models of music copyright

#### Introduction

- 3.1 In this section we consider the economic models of music copyright contained in the Economic Submissions used to estimate the welfare impact of copyright term extension on sound recordings. We consider first some of the key characteristics of the recorded music industry that need to be accounted for when choosing the economic model. We then consider the economic models set out in the Economic Submissions together with our own view of an appropriate economic model.

#### Background on the recorded music industry

- 3.2 There are three characteristics of the recorded music industry that are of critical importance when considering which economic model(s) to use to estimate the welfare impact of copyright term extension on sound recordings. These are:

- the nature of exclusivity granted by copyright on a sound recording;
- the vertical structure of the industry; and
- the existence of other music copyright that persists after sound recording copyright has expired.

- 3.3 Below we discuss each of these characteristics in turn.

#### The nature of exclusivity granted by copyright on a sound recording

- 3.4 The holder of copyright on a sound recording enjoys the sole right to reproduce the sound recording. However, the extent of the exclusivity granted by copyright on a sound recording is narrow. As explained by Liebowitz<sup>17</sup> even if another artist was to replicate the sound of a particular sound recording perfectly in the case of sound-alike recordings this does not breach the copyright on the original sound recording.
- 3.5 In the vast majority of cases, grant of copyright by itself is unlikely to result in a situation where there are no close substitutes for a particular copyrighted sound recording. Consumers buy music depending upon their preferences and the range of artists appealing to these preferences. Whilst some individual

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<sup>17</sup> Liebowitz report, p. 3.

consumers may find certain artists more desirable than others, typically consumers (and retailers) see artists as somewhat substitutable.<sup>18</sup>

- 3.6 That does not mean that all records compete with each other directly, but rather individual consumers will make purchasing decisions from a subset of the overall market for records depending on their personal preferences.

### **The vertical structure of the industry**

- 3.7 The recorded music industry is characterised by a structure that involves a significant number of vertical levels. At a high level the key elements that are relevant to the issue of copyright term extension can be summarised as follows:

- **Composers/publishers** create and administer the musical composition.
- **Artists** record the master recording of the musical composition. The composer and artist might be the same individual.
- **Record companies** invest in Artist and Repertoire (“A&R”) to find new recording artists. They facilitate the production, marketing and promotion of the sound recording. Some major record companies still own distribution divisions and sell their records direct to retailers. Other major record companies, and all independents, sell through independent distribution.
- **Public domain specialists** focus on the copying and exploitation of recorded music that is not covered by sound recording copyright and/ or composer/ publisher copyright.
- **Manufacturers** physically produce copies of the master recording and accompanying artwork. Manufacturers are generally independent of the record companies. Manufacturers do not take ownership of the product and are paid by the record companies on a per-unit basis. For digital music, activities that may be considered comparable with manufacture for physical products are undertaken by other levels in the vertical structure, namely, the record companies, distributors or the retailers.

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<sup>18</sup> This competition between different artists within the same genre/category is reflected in the European Commission’s approach to market definition in *Seagram/Polygram* and *Sony/BMG*, where it left open whether there are separate markets according to genre/category, but did not consider narrower markets than that. See European Commission. 2004. *Decision in Case COMP/M.3333 – Sony/BMG*, ¶ 9-13; and European Commission. 1998. *Decision in Case IV/M.1219 – Seagram/Polygram*, ¶ 15.

- **Distributors** distribute the physical product to retailers. By distributing the products of different record companies, distributors allow retailers to interact with a smaller number of entities than if retailers had to deal with record companies direct. Distributors typically do not take ownership of the product and do not face the risk of unsold stock. Distributors receive a commission on the product they sell to retailers. With respect to digital music, all the majors and some large independents deal directly with retailers. Digital distributors often act as distribution agents for smaller independents as well as providing sales reporting and accounting services.
- **Retailers** sell finished products to end customers. Retailers are independent of all the other participants in the vertical structure. The majority of sales are made in physical stores, although an increasing proportion of physical sales are being made by online stores such as Amazon and an increasing proportion of overall sales are digital sales made by online music stores (such as iTunes), mobile phone operators (such as Vodafone or 3) and subscription services (such as Napster).

3.8 The vertical structure explained above is characterised by a high level of market concentration at both the record company level and the retailer level. In 2005, the four major record companies made up almost 80% of the market in the UK. The largest four independents in the UK had market shares of between 1.4% and 2.5%.

3.9 At the retailer level over 60% of the total market for physical sales is made up by five retailers in the UK. The table below shows market shares in 2005 for retailers of physical records:

**Table 1: UK physical music market shares 2005**

Retailer	Market share
HMV	22.2%
Tesco	12.3%
Woolworths	10.6%
Virgin	9.0%
Asda	8.6%

Source: BPI Statistical Handbook 2005, Additional BPI Statistics

- 3.10 There are a number of players in the UK digital music market, with iTunes clearly established as the market leader. Estimates of iTunes' market share vary from 54%<sup>19</sup> to 80%<sup>20</sup> in the UK.

#### **Other music copyright**

- 3.11 Although a sound recording goes out of copyright after 50 years, in most cases, it is likely that other copyright on the music persists after this date. This is because copyright in the musical composition (music, lyrics and arrangement) lasts for the life of the author plus 70 years. This means that an entity that would like to produce copies of an out-of-copyright sound recording typically would need to pay royalties for their use of the musical composition ("mechanical royalties"). The mechanical royalties in the UK are as follows:

- for physical records, royalties paid for use of the musical composition are 8.5% of PPD or in circumstances where there is no PPD the royalty rate is 6.5% of the retail price; and
- for digital music, royalties paid for use of the musical composition are 8% of gross revenues and licensees are required to pay minimum charges per track or album.

- 3.12 The need typically to pay mechanical royalties means that when a sound recording goes out of copyright, public domain specialists cannot produce copies of the sound recording without incurring copyright costs and hobbyists are unlikely to provide copies of out-of-copyright sound recordings on the internet free of charge because they still face a significant marginal cost per track.

#### **Economic models in the Economic Submissions**

- 3.13 We have reviewed the analysis of the impact on social welfare contained in each of the Economic Submissions. The Lampel report does not contain any analysis of this type. The PwC report does not analyse the impact of term extension for sound recordings on overall social welfare through the use of an explicit model although it does contain a study of consumer prices of in-copyright and out-of-copyright recordings.
- 3.14 The CIPIL report provides the most explicit quantitative analysis using a simple theoretical model of copyright to estimate the overall change in social welfare

<sup>19</sup> XTN Data cited in The Register, <http://www.register.co.uk/>

<sup>20</sup> Apple press release, <http://www.apple.com/pr/library/2005/sep/07itms.html>

from copyright extension on sound recordings. The qualitative analysis of the impact on social welfare in the Hugenholtz report relies on similar assumptions to those contained in the CIPIL model.

- 3.15 The Liebowitz report does not attempt to analyse the impact of copyright term extension on social welfare, but does contain a discussion of some parameters that are relevant to the impact on social welfare such as the elasticity of supply of music with respect to changes in revenue.
- 3.16 In the discussion below we focus on the analysis contained in the CIPIL model, with reference to the qualitative analysis in the Hugenholtz report, where relevant, and the empirical evidence from the PwC report. The discussion of relevant parameters contained in the Liebowitz report is contained in section 4.

#### **Analysis of the economic models**

- 3.17 Like any estimates based on a theoretical model, the estimates are only as good as the underlying model. If the underlying model does not fit the facts of a case, its use to provide estimates on which to make policy decisions will be flawed; the CIPIL model, and Hugenholtz's analysis based on similar assumptions, suffers from precisely this problem: it is highly sensitive to the use of a model of competition which does not appear to fit the characteristics of the recorded music industry.
- 3.18 The CIPIL report concludes that a term extension would likely reduce welfare overall. To quantify the impact of term extension on social welfare, the CIPIL report compares the increase in welfare due to the creation of new works with the additional deadweight loss on works that would have been produced in the absence of term extension. In comparing these two welfare states, CIPIL's theoretical model explicitly assumes that the price for consumers drops to some 'competitive level' once copyright expires.<sup>21</sup> This assumption generates CIPIL's main finding that there is a link between copyright increasing consumer welfare by generating incentives for the creation of new works and in reducing consumer welfare due to the higher prices consumers pay.
- 3.19 These key assumptions are replicated in the qualitative analysis contained in the Hugenholtz report. For example at page 104:

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<sup>21</sup> CIPIL report, p.23 and p.26.

*Exclusive rights in e.g. phonograms grant a temporary monopoly to phonogram producers. This allows phonogram producers to charge a price that is higher than under perfect competition. In the absence of an exclusive right, the equilibrium price for e.g. a CD would equal marginal costs, i.e. the total costs that it would take to produce an additional copy of that CD. If a producer tried to sell a CD at a higher price than marginal costs, someone else could easily outdo him by offering copies at a lower price.*

- 3.20 These assumptions fail to account appropriately for the characteristics of the recorded music industry. They either ignore the vertical structure of the recorded music industry and the nature of exclusivity granted by copyright on sound recordings, or make inappropriate assumptions about their impact.
- 3.21 With respect to the vertical structure of the industry, the assumptions underlying the CIPIL model and Hugenholtz's analysis are consistent with a model of competitive interaction of 'take it or leave it' competition. These types of models assume that the upstream entities (in this case the artists and/ or record companies) have all the bargaining power. The upstream entity sets the price, and the downstream entity (in this case the retailers) are forced to either take this price, or leave it. Thus if the artist and/ or record company increases the price (for example because it has copyright), then the downstream entities simply have to accept this increase in price and sell a lower number of the artist's work. This 'take or leave it' proposition is at the heart of CIPIL's main result: any increase in price (revenues) upstream simply results in higher prices downstream that are passed onto consumers.
- 3.22 This type of model, where downstream entities have no bargaining power whilst the upstream entities have all the bargaining power, is appealing to economists for two reasons, (i) it is analytically very simple and allows them to derive quantitative results (as CIPIL have done), and (ii) in many cases the upstream entities do have the bargaining power.<sup>22</sup> However these models have been criticised in the economic literature for their application to situations where the

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<sup>22</sup> See for example Vickers and Bonanno (1988) who analyse a duopoly model where manufacturers can either sell directly to consumers or sell through an independent retailer. They assume that manufacturers have all the bargaining power and can use a franchise fee to extract retailers' surplus. Vickers, John and Giacomo Bonanno. 1988. "Vertical Separation." *The Journal of Industrial Economics*, 36(3): 257-265.

upstream entity does not hold all the bargaining power and more recent models allow for varying degrees of bargaining power.<sup>23 24</sup>

### **Analysis of the recorded music industry in a bargaining model**

- 3.23 When bargaining power is split between the upstream entity and the downstream entity then the upstream entity cannot simply dictate prices. The downstream entity has an interest in keeping the upstream prices low, because they represent a cost to it. By lowering its upstream input costs it can sell more units and increase its profits. In these types of economic model the final consumer price is often fixed due to competition downstream, whilst the different strength of bargaining power between the upstream entity and the downstream entity determines where the profit will be made.<sup>25</sup> In the recorded music industry, where the record company and retailer level of the vertical structure are relatively concentrated (as set out above) it is unlikely that the downstream entities have no bargaining power. In fact, the bargaining power of the retailer level, in particular supermarkets, is a well documented driver of increasing record company discounts from PPD.<sup>26</sup>

<sup>23</sup> For example, Inderst and Wey (2003) analyse a model of upstream and downstream oligopoly where distribution of industry profit is determined by a procedure of bilateral negotiations. Inderst, Roman and Christian Wey. 2003. *Rand Journal of Economics*, 34(1): 1-19.

<sup>24</sup> The first formal economic models of bargaining were introduced by the Nobel prize winner John Nash with two pioneering papers in 1950 and 1953. Subsequently Stahl (1972) and Rubinstein (1982) developed solutions to bargaining involving alternating (sequential) offers under certainty. This work was then extended to account for uncertainty by, among others, Rubinstein (1985) and Sobel/Takahashi (1983). It should be noted that CIPIL's 'take it or leave it' model is a simple subset of the bargaining literature where one party has all the bargaining power and the other party can only accept or leave the offer. These offers have also been analysed in the bargaining economics literature. For example the 'ultimatum game' frequently analysed in economic experiments includes a 'take it or leave it' offer, see e.g. Güth et al (1982). Nash, John F. 1950. "The bargaining problem." *Econometrica* 18(2): 155-162. And Nash, John F. 1953. "Two person cooperative games." *Econometrica* 21(1): 128-140. Stahl, Ingolf. 1972. *Bargaining Theory*, Stockholm School of Economics. Rubinstein, Ariel. 1982. "Perfect equilibrium in a bargaining model." *Econometrica*, 50(1): 97-109. Rubinstein, Ariel. 1985. "A bargaining model with incomplete information on time preferences." *Econometrica*, 53(5): 1151-1172. Sobel, Joel and Ichiro Takahashi. 1983. "A multi-stage model of bargaining." *Review of Economic Studies*, 50(3): 411-426. Guth, Werner, Rolf Schmittberger and Bernd Schwarze. 1982. "An experimental analysis of ultimatum bargaining." *Journal of Economic Behaviour and Organization*, 3(4): 367-388

<sup>25</sup> See for example Shaffer and O'Brien (2005) who analyse the effect that horizontal mergers have on the bargaining power between upstream firms and a downstream monopolist. They find that merging and bundling of products results in consumer prices being unchanged, but the downstream firm being able to negotiate more of the rent than the upstream firm. Shaffer, Greg and Daniel P. O'Brien. 2005. "Bargaining, Bundling, and Clout: The Portfolio Effects of Horizontal Mergers." *Rand Journal of Economics*, 36(3): 573-595.

<sup>26</sup> For example, in the European Commission. 1998. Decision in Case IV/M.1219 – Seagram/Polygram "The range of the discount depends on a number of factors such as the bargaining power of the wholesaler or retailer, achievement of sales targets and promotional campaigns." ; and also "Many shops get a discount due to their buying power; small Independent labels might get a few percent, while big chains like HMV or Virgin might secure around 10 or even 15 percent" from <http://www.soundonsound.com/sos/Jan03/articles/diylabel5.asp>. Information provided by the BPI indicates that current levels of discount to retailers are, on average, substantially higher than this, and increasing.

3.24 The entities at each level of the vertical structure all bargain with each other in order to gain as large a share of the overall profit from sound recordings as possible. This is explained below, focusing on the key levels in the vertical structure:

- *Composers / Publishers:* The mechanical royalties received by composers and publishers are the same for sound recordings that are in and out of copyright. Therefore, their negotiation with downstream entities is with respect to all sales and their position does not change depending on whether the sound recording is in or out of copyright.
- *Artists:* An artist's bargaining position with the record companies depends upon a number of factors, for example his popularity, his existing contracts, his expected future record sales and the current trends of the recorded music industry. Artists compete to some extent with other artists, and the more artists there are of similar genres the lower the artist's bargaining position may be with the record companies.
- *Record companies:* Record companies' bargaining position with artists will depend on a number of factors such as their reputation, the newness (and hence uncertainty) of the artist, their ability to access distribution channels and promote the artist.
- *Public domain specialists:* Public domain specialists identify, out of the pool of works for which copyright has expired, those for which there is still demand.<sup>27</sup> Because the material is out of copyright they do not have to pay royalties to record companies that produced the recording or the artists. For this reason and since mechanical royalties do not vary between in-copyright and out-of-copyright sound recordings the public domain specialists are effectively the sole ultimate upstream entity for out-of-copyright sound recordings.
- *Music Retailers:* Music retailers sell copyright-protected as well as out-of-copyright recordings to final consumers. Music retailers' bargaining power with recording companies depends on their ability to distribute the records. A large retailer who sells a large number of records is able to secure lower cost records from both the record companies and the public domain specialists.

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<sup>27</sup> PwC report, p.43.

- 3.25 As discussed above, the nature of the exclusivity granted through copyright on sound recordings is relatively narrow since each sound recording is likely to be substitutable with other sound recordings from the consumer's, or retailers', perspective. This accounts for why retailers generally sell similar types of artists for the same amount. For example, in general albums in the top 10 (which are likely to be in competition with each other) are all similarly priced<sup>28</sup>, whilst older albums are discounted.<sup>29</sup> For this reason, the highest price at which a retailer can sell an individual album is largely fixed by the price of the other substitute albums. In general, increasing the price for a single album will result in its sales going instead to other albums of a similar genre.
- 3.26 Consumers value the choice that they have without having to shop in multiple stores to find multiple artists.<sup>30</sup> Consumers expect to be able to see a large selection of artists in a retail store. For example, Music Week each year chooses a music retail chain of the year with one of the main criteria for evaluating the retail chains being their product range.
- 3.27 The main retailers cater to demand for variety by providing as large a selection of artists as possible, however, they are limited in the number of artists and their works that they can offer by the size of the physical retail space.<sup>31</sup> Given there is this limitation, one might expect retailers to simply concentrate on stocking only a very small number of the most profitable albums; however, this reduces the ability of the retailers to offer a large choice to consumers.<sup>32</sup> Retailers thus make trade-offs between the desire to stock the most popular, or profitable, artists and a desire to provide a wide variety of choice. If retailers were to drop prices of the

<sup>28</sup> E.g. on 17 May 2007 the UK's top ten albums (available from <http://www.bbc.co.uk/radio1/chart/albums.shtml>) were selling on amazon.co.uk ([www.amazon.co.uk](http://www.amazon.co.uk)) at almost identical prices (9 albums were selling at £8.98; 1 was selling at £8.99).

<sup>29</sup> Although we note that there may be very successful albums that sell at high prices even long after their first release (e.g. Bruce Springsteen's "Born in the USA" and Madonna's "Like a Virgin", which both sell at £10.98 on amazon.co.uk and were both released in 1985), generally older albums are sold at significantly lower prices than the top 10 albums.

<sup>30</sup> See Dana (2001) for a discussion of why consumers value consumer choice. Music Week, 24 March 2007, p.29 Dana, James D. Jr. 2001. "Competition in Price and Availability When Availability is Unobservable." *Rand Journal of Economics*, 32(3):497-513.

<sup>31</sup> Similarly, Shaffer (1991) analyses slotting allowances and resale price maintenance using a model, in which manufacturers make retailers a 'take it or leave it' offer but retailers have capacity constraints. In this model even though there is a 'take it or leave it' offer, the retailer extracts rent due to its 'limited capacity'. Shaffer, Greg. 1991. "Slotting allowances and resale price maintenance: a comparison of facilitating practices." *Rand Journal of Economics*, 22(1): 120-135.

<sup>32</sup> We note that capacity constraints may be less severe in online music retail. However, we also note that it is currently iTunes practice and declared strategy to apply uniform pricing and charge the same price for all songs available. iTunes has declared this is preferred by customers who find a single uniform price less confusing than multiple prices. (<http://www.nytimes.com/2005/08/27/technology/27apple.html?ei=5090&en=01f491c5944a0133&ex=1282795200&pagewanted=print> (visited 17 May 2007)).

non-copyright albums when capacity is limited it would reduce their profitability without increasing their sales significantly.<sup>33</sup>

- 3.28 When producing copies of out-of-copyright records, the public domain specialists are under no legal obligation to pay sound recording royalties, and hence they can expropriate the artists' and record companies' share of the economic rents. The extent to which they realise these extra rents will depend upon the strength of the retailers' bargaining power. If there are many public domain specialists then one might expect that the retailers will have a much stronger bargaining position. This will allow the retailers to expropriate some of the economic rent of the public domain specialists.

#### **Implications of copyright term extension in a bargaining model**

- 3.29 Increasing the copyright term means that certain records which would have been out of copyright will remain in copyright. This means that potential manufacturers would be required to pay royalties that would otherwise have been avoided. Therefore, the cost of producing such records would be higher than if the copyright term were not extended.
- 3.30 The bargaining model that we believe most accurately reflects the behaviour of participants in the recorded music industry, would predict certain outcomes as a result of term extension:
- Public domain specialists would need to pay royalties, or more likely, would not be able to produce the sound recordings;
  - The prices charged by record companies to retailers would be determined by the record companies' and retailers' relative bargaining positions; and
  - Consumers prices would not be higher since prices are determined by the level of competition across records<sup>34</sup>.
- 3.31 The result of the extension on copyright would be simply a change in the bargaining position between the public domain specialists and the artists and hence a shift in the rent distribution. End prices to consumers would not change.

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<sup>33</sup> This is consistent with the evidence that out-of-copyright products account for only a relatively small share of total revenues. Liebowitz calculates in his report that in 2004 sales of products with copyright date in the 1950s or earlier amounted to only 2.6% of total revenues (1940s and earlier 0.3%, 2000s 60.9%). Liebowitz report, p.14.

<sup>34</sup> This does not mean there is no price variation within the market, but that similar works are likely to be similarly priced. As the existence (or not) of copyright does not determine the musical tastes of consumers, it is not likely to be a significant factor in explaining such variability as does exist.

**Data on the impact of copyright on consumer prices**

- 3.32 The hypothesis that end prices to consumers would not change can be tested with reference to current prices of copyright-protected and out-of-copyright sound recordings. The only empirical data we have seen on this issue has been provided by PwC. The conclusion in the PwC report was that average prices of a sample of UK copyright-protected and out-of-copyright works are not significantly different.<sup>35</sup>
- 3.33 PwC analysed a dataset of 129 albums recorded in the period 1950-1958<sup>36</sup> and their corresponding current retail and wholesale prices.<sup>37</sup> The dataset consisted of approximately equal amounts of copyright-protected and out-of-copyright albums. In particular, PwC compared:
- Mean average prices of copyright-protected and out-of-copyright albums (statistical analysis);
  - Prices of albums by the same performer differing according to their copyright status (direct comparison of prices); and
  - Prices of albums by the same label differing according to their copyright status (direct comparison of prices)<sup>38</sup>
- 3.34 Their results showed that all of the above tests did not show significantly different prices. Overall, PwC found no evidence that out-of-copyright albums are priced significantly below copyright-protected albums.
- 3.35 From our reading of the report it is clear that PwC have attempted to control for differences in quality from copyright and out-of-copyright music by sampling albums recorded by the same musicians.
- 3.36 We believe that, in the absence of any conflicting evidence, PwC's finding can be taken as *prima facie* evidence that copyright and non-copyright prices are not significantly different.

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<sup>35</sup> PwC report, p. 42-49. The comparison made by PwC is between copyright-protected and out-of-copyright protected sound recordings made in the period 1950 – 1958. In our view, this is an appropriate comparison because it adjusts for differences in current popularity, which may affect prices.

<sup>36</sup> Obtained from the Muze database and from [www.fiftiesweb.com](http://www.fiftiesweb.com).

<sup>37</sup> Retail prices were obtained from amazon.com and high street retailers HMV and Virgin Megastore on Oxford Street in London. Wholesale prices were obtained from the Muze database and Official UK Charts Company.

<sup>38</sup> PwC report, p.44. Please note that PwC also analysed prices of classical recordings.

**Conclusion**

- 3.37 Our analysis has strong implications for welfare analysis of term extension. The CIPIL model and Hugenholtz's qualitative analysis assume the trade-off caused by copyright protection between increased surplus through the creation of new works and increase in deadweight loss due to monopoly pricing in the period of extension. However, our more detailed analysis of the recorded music industry suggests that this trade-off may not apply to copyright extension. Our analysis has shown that from a theoretical perspective it is more plausible to expect that prices do not in fact fall as changes in copyright simply lead to shifts in bargaining power. In this case, there is no meaningful increase in deadweight loss. The empirical evidence presented by PwC supports this expectation.
- 3.38 Term extension would, however, lead to benefits in the form of creation of new works. It is important to notice that artists only receive recording royalty income from copyright-protected works produced by record companies. Any income (in excess of production costs) generated from out-of-copyright works flows to public domain specialists, who do not invest in the creation of new works. If this income becomes available to record companies and/ or artists it is very likely that this would lead to an increase in the creation of new works. These issues are considered further in sections 4 and 5.
- 3.39 The overall effect would be a likely increase in new works *without* a meaningful increase in deadweight loss.

## 4 Welfare calculations in the CIPIL report

### Introduction

- 4.1 In addition to our review of the basic economic models contained in the Economic Submissions, we also reviewed the specific calculations of overall social welfare that are set out in the CIPIL report. No such calculations have been made in any of the other Economic Submissions.

### Analysis of CIPIL calculations

- 4.2 CIPIL have used their theoretical model to provide estimates of the welfare impact of the extension in copyright. As we have shown, the theoretical model used by CIPIL does not fit the characteristics of the recorded music industry and is not supported by the empirical evidence. Other economic models fit the evidence presented and indeed reverse the CIPIL findings.
- 4.3 Even if the CIPIL model was accepted as an appropriate framework, we find that the CIPIL model is highly sensitive to small changes in parameter estimates and that parameters actually used by CIPIL are unsupported.
- 4.4 However, before discussing the sensitivity of the CIPIL model to changes in parameter estimates it is first necessary to discuss the impact of a fundamental error in the calculations made by CIPIL.

### Error in the CIPIL model

- 4.5 CIPIL have made a fundamental error in their algebra that renders their current estimates inadequate to determine the impact of the welfare change. This error is centred around CIPIL's key equation for welfare, which is set out below (the expression that leads to the error is highlighted in bold):<sup>39</sup>

$$\frac{N(T)}{(1-b)(1-d)} (y(N)s(N)x - q(N)b^T(\mathbf{1} - \mathbf{b}^k))$$

- 4.6 The formula above includes the rate of cultural depreciation, 'b'. This variable reflects the fact that the benefits from a particular piece of recorded music, both financial and cultural, diminish with time.

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<sup>39</sup> CIPIL report, p.26.

4.7 PwC performed an analysis of the rate of cultural depreciation; this analysis is referred to in the CIPIL report on page 32, where it cites a 'b' of music sales of 0.97 and a 'b' of licence fees of 0.92. This suggests that 'b' is calculated as 1 minus the annual fall in sales over the previous year. However, when CIPIL simplify their formula for social welfare they incorrectly assume that 'b' = 0.06, "annual decline in sales" and not 'b' = 1 - 0.06 = 0.94, "1 minus the annual decline in sales."

4.8 In order to simplify their equation for welfare, CIPIL makes the assumption that:<sup>40</sup>

$$(1 - b^k) \approx 1$$

4.9 This assumption makes sense if  $b$  was equal to 0.06 since in this case  $b^k$  would be close to zero ( $k$  is the length of term extension). Even with an extension of only 20 years,  $b^k$  is close to zero (i.e.  $0.06^{20}$ ). In contrast, with the correct figure for  $b$  (i.e. 0.94)  $b^k$  is not close to zero (i.e.  $0.94^{20} = 0.29$ ). Therefore, the CIPIL simplifying assumption is not correct.

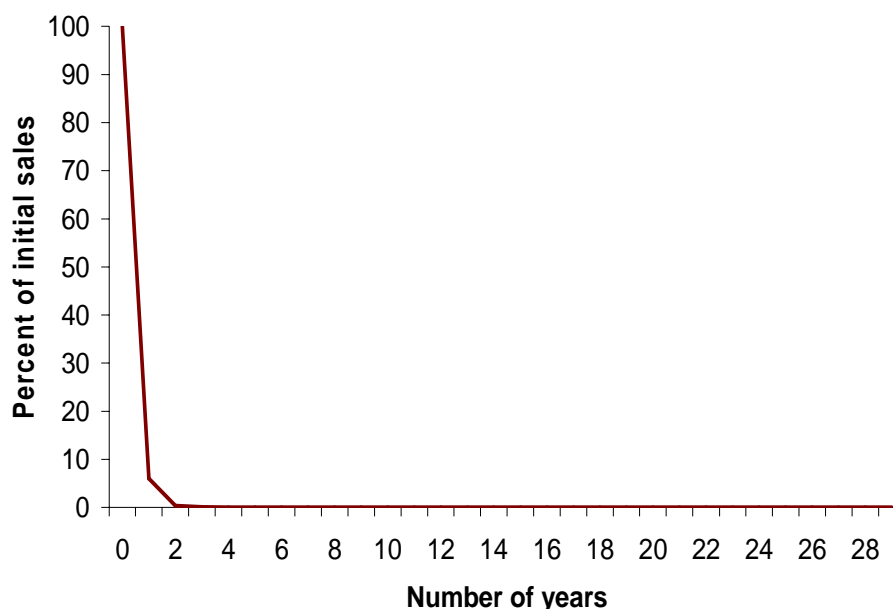
4.10 If we took CIPIL's assumption at face value, the implication of their assumption is that sales in new music would fall to only 6% of initial sales after one year and 0.36% in only 2 years.

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<sup>40</sup> CIPIL report, p.26.

4.11 Figure 1 below illustrates this method of depreciation.

**Figure 1: Depreciation of the form  $b^{\text{time}}$**



Source: LECG illustration.

- 4.12 We understand that this does not correspond to the facts in the industry and analysis of UK data provided by Liebowitz (2006) shows that sales of records released in the 1960s still accounted for 4.8% of 2004 revenues.<sup>41</sup>
- 4.13 The impact of this error is that CIPIL's final equation, which they use to calculate the welfare change, is missing the  $(1 - b^k)$  term entirely. This term is important because  $k$  is the term of extension. Without this term, their final equation is missing any reference to the period of extension. If we were to take CIPIL's model and change  $k$ , for example by extending copyright by 1000 years, this would have the same effect as reducing it by 50 years (to 0, so eliminating copyright altogether). This result makes little sense.
- 4.14 Therefore, it is entirely inappropriate to rely on their estimate that an extension in the copyright term by 45 years reduces welfare by 7.8% (or £155 million result), because these calculations are predicated on this fundamental, basic error. Based on a strict reading of their final equation, they could have concluded that the welfare loss was £155m for copyright terms of 0 years or 1,000 years.

<sup>41</sup> Liebowitz report, p.14.

**Sensitivity of the CIPIL model to its parameter estimates**

- 4.15 Section 8 of the CIPIL report provides an estimate of the impact of copyright extension on welfare. To arrive at this numerical estimate, the report makes several assumptions regarding the value of key parameters. The report fails to support the assumptions it makes on three of the key parameters with any empirical evidence. This is particularly important because small changes in these key parameters can reverse CIPIL's finding after correcting for the error explained above.
- 4.16 First, taking  $p(N)$ , which is the average value of the ratio of welfare to revenue. This parameter, together with the deflator discussed below, is crucial for determining  $y(N)$ , the marginal value of the ratio of welfare to revenue. However, CIPIL has no evidence regarding their chosen values of  $p(N)$ . Indeed in trying to come up with an estimate for it, CIPIL themselves state:
- Coming to welfare (producer plus consumer surplus) we are truly in the dark.*<sup>42</sup>
- 4.17 Consequently, the report's estimate of  $p(N)$  amounts to little more than an informed guess, which is also reflected by the huge range of "plausible" parameter values the report puts forward: 0.25 - 30.0. This is highly important because  $p(N)$  has a strong impact on the report's overall welfare estimate.
- 4.18 Second,  $y(N)$ , which is the marginal value of the ratio of welfare to revenue. The report estimates this parameter by reducing the value of  $p(N)$ , the average value of the ratio of welfare to revenue, by some fixed proportion that they term the 'deflator'. This deflator is important because it has a strong impact on the welfare level, however, CIPIL provide little evidence regarding what this level is. CIPIL note that they consider the number of albums produced today already very high and concludes that "[...] allowing a deflator of 0.1-0.3 would seem very reasonable."<sup>43</sup> However, they provide no back up for this figure, and indeed there is no reason why it may not be higher or lower than CIPIL's estimate.
- 4.19 Third,  $s(N)$ , which is the elasticity of supply of new work with respect to revenue. CIPIL provide no evidence to support their assertion that a range of 0.5 – 1 (using

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<sup>42</sup> CIPIL report, p.45.

<sup>43</sup> CIPIL report, p.46.

0.7 in their estimate) is the correct range of values value for this parameter.<sup>44</sup> Other Economic Submissions suggest different potential values for this variable, for example Liebowitz suggests that that an elasticity of supply of 4 could be possible<sup>45</sup>.

- 4.20 Furthermore, we also note that the report itself provides wide ranges for nearly all the parameters that relate to welfare, deadweight loss and the elasticity of supply as illustrated in table 2 below.

**Table 2: Range of estimates of welfare and deadweight loss from the CIPIL report**

Parameter	Estimate put forward in (or implied by) report
p(N)/q(N)	1.0 - 15.0
q(N)	0.25 - 2.0
p(N) (implied)	0.25 – 30
Deflator	0.1 – 0.3
y(N) (implied)	0.025 – 9
s(N) – from parameter list	0.5 – 1
s(N) – from main text (p.45)	“very unlikely larger than 2”

Source: CIPIL report.

- 4.21 After correcting for CIPIL’s error in ‘*b*’ discussed above, we find that small changes to their parameters can reverse their main findings and show that term extension (both 20 and 45 years) results in an increase in overall social welfare. For example simply changing  $y(N)$  to 0.75 (from 0.5), the interest rate  $r$  to 5% (from 7%) and the elasticity of supply  $s(N)$  to 2 (being still more conservative than Liebowitz’s estimate) reverses CIPIL’s result that welfare is reduced.
- 4.22 Other simple changes in the parameterisation, still within CIPIL’s estimates also result in a reversal of their main conclusion, and suggest that term extension would, in fact, increase overall welfare.

## Conclusion

- 4.23 In simplifying the formula for calculating the effect of a term extension, CIPIL have substituted in one of the terms incorrectly. The effect of this incorrect substitution is to render the copyright term meaningless in their calculation. Therefore

<sup>44</sup> In fact, CIPIL states that “*elasticity of supply is unlikely to be larger than 2 and may well be significantly less than 1 [...].*” They then assume a plausible range of 0.7-1 for this parameter. CIPIL report, p.46.

<sup>45</sup> Liebowitz report, p.8.

extending the term indefinitely gives the same result as eliminating copyright entirely (that is reducing the term to zero).

- 4.24 After correcting for this error in the formula contained in the CIPIL report, we find that their calculation is highly sensitive to small changes in the values of the parameters they have chosen. Small changes, still within the parameter values CIPIL quotes, can lead to their model producing results that indicates an increase in copyright term leads to welfare increasing.
- 4.25 The potential range of these parameters is, even on the basis put forward by CIPIL, significant and certain of the other Economic Submissions estimate values for particular key parameter values that fall far outside the ranges put forward by CIPIL. Further, CIPIL themselves indicate that they have limited, or in some cases no, evidence to support the choice of particular estimates. Therefore, we do not believe that the calculations put forward by CIPIL can be used to inform any decision about whether the copyright term should be extended, particularly when their analysis conflicts with other, empirical, evidence.

## 5 The investment behaviour of record companies

### Introduction

- 5.1 Certain of the Economic Submissions, notably CIPIL (although it is also referred to by PwC), suggest that the profitability of record companies ought to have no effect on the level of investment in new artists by recording companies. This argument refers to a basic theory of finance, first posited by Modigliani and Miller<sup>46</sup>, that states that where a project has a positive Net Present Value (“NPV”), the investment should be undertaken; how that project is financed is irrelevant to the decision as to whether to invest or not.
- 5.2 On this basis, CIPIL assert that a retrospective extension of the copyright term will have no impact on the amount of music created in the future because the decision to invest in new artists should be independent of the revenues from existing income streams.
- 5.3 This key assertion relies on an assumption that capital markets are “perfect”.<sup>47</sup> In practice, capital markets are not perfect and so companies, even sophisticated, rational ones, do not always act in the way predicted by models that assume such perfection.
- 5.4 Further, it must be remembered that economic models are created by economists to predict behaviour. If the model does not accurately predict the behaviour it is supposed to be modelling then it is not the behaviour that is flawed, but the model. Therefore, in this particular case, what a model of perfect capital markets predicts about the level of investment in music creation by record companies is irrelevant if this model does not accurately reflect their actual behaviour.
- 5.5 In this section, we discuss some of the issues that give rise to imperfections in capital markets and so which might lead to a different pattern of behaviour by the record companies than CIPIL assert ought to occur. We also review the actual investment behaviour of the major record companies to determine, whether, in fact, it is in line with the model suggested by perfect capital markets.

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<sup>46</sup> Modigliani, Franco and Merton H. Miller. 1958. "The Cost of Capital, Corporation Finance and the Theory of Investment." *American Economic Review*, 48(3): 261-297.

<sup>47</sup> This requires: no transaction costs, perfect competition among providers of capital, information efficiency, and no agency, or bankruptcy, costs.

## Imperfections in the capital markets

- 5.6 The idea that capital markets are perfect has evolved since Modigliani and Miller's first developed the theory. As stated by Carpenter and Peterson:<sup>48</sup>

*[...] in recent years [...] a body of theoretical work has challenged the key assumptions for perfect capital markets. If the firm has better information about its investment returns than potential investors, external finance may be expensive, if available at all, because of adverse selection and moral hazard problems. (...) In addition to this theoretical work, a large number of recent empirical studies report evidence that investment for some firms appears to depend on their financial condition.<sup>49</sup>*

- 5.7 Like any economic model, the basic theory does not hold where the underlying assumptions do not hold in reality. There are a number of reasons why the concept of a perfect capital market does not work in practice. Furthermore, the recorded music industry has many characteristics which exacerbate the imperfections in the market.
- 5.8 One identified market imperfection relates to the presence of information asymmetries. These asymmetries often frequently occur in complex industries and ones where future performance is difficult to predict without inside knowledge. In these circumstances, the inside knowledge of management puts potential providers of capital (of both debt and equity) at a disadvantage, which tends to increase the return required by providers of capital to insure against the risk that their inferior information puts them at a disadvantage when estimating the return they ought to require. One theory of financing that has developed out of the research into information asymmetry in capital markets is the concept of a 'pecking order', which suggests that there is hierarchy for investment finance.
- 5.9 The pecking order is discussed by Halov (2006), who states:

*[...] since the seminal research by Myers (1984) and Myers and Majluf (1984) it has been recognized that when it is impossible or costly for firms to convey the true value of their assets to outside*

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<sup>48</sup> Carpenter, Robert E. and Bruce C. Peterson. 2002. "Capital market imperfections, high tech investment, and new equity financing." *The Economic Journal*, 112(477): F54-F74.

<sup>49</sup> We note that there is still significant debate in relation to this issue in the academic literature.

*investors, firms may be forced to forgo projects with positive net present value. In reaction, companies optimally choose to use sources of funds that are insensitive to the information advantage of insiders. When managers know more about the mean expected returns, this leads to the classical pecking order of using all internal funds first and if additional capital is needed to be raised, debt should be issued. Equity should be issued only as a last resort when the leverage is at a very high level at which the firm has exhausted its debt capacity.<sup>50</sup>*

5.10 Another market imperfection is the existence of transaction costs, which are the costs associated with raising finance, but which are assumed away in perfect capital markets. Where these transaction costs are not constant across the different types of finance, the choice of funding method may affect the overall return to the investment.

5.11 Kytönen discusses the influence of such transaction costs on the requirement for managers to maintain financial flexibility, which increases the preference to use internal funds ahead of external capital:

*Managers trying to minimize the costs associated with external financing in imperfect capital markets may find it optimal to maintain sufficient internal financial flexibility. Increases in external finance costs in the presence of transaction costs and other financial restrictions, [leads to] costly agency problems such as underinvestment and asset substitution (Myers 1977, Jensen and Meckling 1976), and asymmetric information between firms and external investors (Myers and Majluf 1984).<sup>51</sup>*

5.12 For record companies, who are likely to face more uncertain returns from their investment projects than companies in many industries, the market imperfections will be exacerbated. As discussed in Baum et al:

<sup>50</sup> Halov, Nikolay. 2006. "Dynamics of Asymmetric Information and Capital Structure.", [www.business.uconn.edu/redirect/finance/seminars/papers/Halov\\_job\\_market\\_paper\\_Nov06.pdf](http://www.business.uconn.edu/redirect/finance/seminars/papers/Halov_job_market_paper_Nov06.pdf) (downloaded 21 May 2007).

<sup>51</sup> Kytönen, Erkki. 2005. "Corporate liquidity holdings: An empirical investigation of Finnish firms." Paper presented at XXII Summer Seminar in Business and Economics, Jyväskylä, Finland 8-9 June 2005. Available at [www.ulapland.fi/kytonen/kesaseminaari](http://www.ulapland.fi/kytonen/kesaseminaari) (downloaded 21 May 2007).

*[...] as many researchers have shown, when uncertainty varies over time, the presence of asymmetric information problems affects potential lenders' assessment of the firm's creditworthiness and thus the firm's ability to raise external funds. In such circumstances, firms' capital expenditures are distorted as the risk premium that lenders require to provide funds increases along with the uncertainty in the environment.<sup>52</sup>*

- 5.13 Carpenter and Peterson (2002) discuss imperfection of capital markets and uncertainty in the specific context of an examination of high-tech firms, which share a number of characteristics with investments in new artists in the recorded music industry:

*There are three reasons why high-tech investment is particularly likely to be affected by capital market imperfections. First, the returns to high-tech investment are skewed and highly uncertain, in part because R&D projects have a low probability of financial success. Second, substantial information asymmetries are likely to exist between firms and potential investors. Because high-tech investments are difficult to evaluate and frequently embody new knowledge, insiders will have much better information than outsiders about the prospects of the firm's investments. Even if firms could educate outsiders, appropriability problems may induce firms to limit the amount of information they are willing to provide to suppliers of funds. ... Finally, high tech investments often have limited collateral value. R&D investment, which is predominantly salary payments, has little salvage value in the event of failure.<sup>53</sup>*

- 5.14 As such the record companies, who also face significant uncertainty in their investment decisions, and limited collateral value in the case of failed investments, may also be subject to greater levels of market imperfections than many other industries.

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<sup>52</sup> Baum, Christopher F, Mustafa Caglayan and Oleksandr Talavera. 2007. "Firm Investment and Financial Frictions." DIW Discussion Paper 634..

<sup>53</sup> Carpenter, Robert E. and Bruce C. Peterson. 2002. "Capital market imperfections, high tech investment, and new equity financing." *The Economic Journal*, 112(477): F54-F74.

### **Implications for investment behaviour by record companies**

- 5.15 Imperfections in the capital markets and the nature of investing in new artists mean that there are perfectly valid reasons why record companies would choose to finance future investment out of retained earnings rather than from external investment. Further, the potential costs of external funding could justify decisions not to invest in otherwise NPV positive investment opportunities.
- 5.16 In practice, it appears to be commonly understood that record companies do rely on current earnings to make investments in new content. Nigel Parker states in his book<sup>54</sup> that:

*[...] the music business has grown up based on long-tail income from established copyrights. Accumulation of copyrights spreads risk and generates funds to finance new music. Without long term profits from the most successful creators, investment in new music would be almost non-existent.*

- 5.17 In the remainder of this section we examine whether the empirical data on record company investment in artists supports the hypothesis that new content is financed out of retained earnings.

### **Actual investment behaviour of record companies**

- 5.18 In order to test the hypothesis that the practical reality of the recorded music industry is that future sound recordings are financed from current revenues we collected data from all four major record companies in the UK. We attempted to collect data on measures of financial success (e.g. revenue and profits) and measures of investment in recorded music (e.g. A&R).
- 5.19 We have collected data on revenue and A&R spending from all four of the major record companies for recent years.<sup>55</sup> This data set, while limited by the companies' ability to extract relevant data in the time available, is sufficient to provide some evidence that appears directionally meaningful. Whilst revenue does not directly reflect record company earnings, it should provide some

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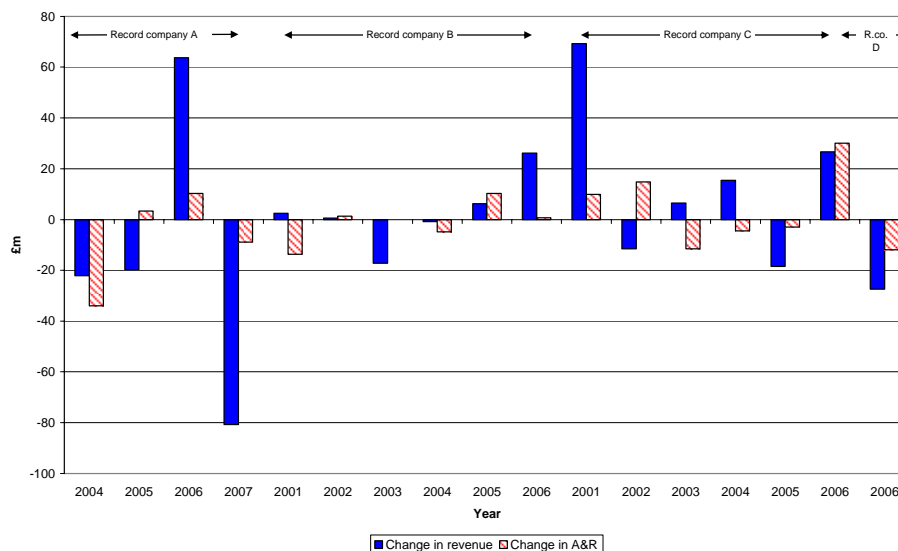
<sup>54</sup> Parker, Nigel. 2004. *Music Business: Infrastructure, Practice and Law*. London: Sweet & Maxwell, p.3.

<sup>55</sup> Two companies provided data covering 2000 to 2006, one provided data covering 2003 to 2007 and one company provided data covering 2005 to 2006.

measure of performance given that a large portion of record company costs are fixed.<sup>56</sup>

5.20 To analyse the relationship between A&R and revenue we have calculated the change in A&R and the change in revenue for each year of record company activity. Given that calculating the changes in these variables removes the primary specific company difference, i.e. scale, it is reasonable to review this data together. The figure below shows the change in revenue against the change in A&R for each observation of record company data available. This figure includes data from all four majors.

**Figure 2: Comparison of changes in revenue and changes in A&R**



5.21 The figure shows that for 12 of the 17 observations the change in revenue is in the same direction as the change in A&R. The data also shows a statistically significant correlation coefficient between the data of 0.47. The probability that the positive correlation shown in the data has occurred by chance is only 5.7%. The data is consistent with the hypothesis that the practical reality of the recorded music industry is that future sound recordings are commonly financed from current revenues.

<sup>56</sup> Given differences in both the availability of relevant data and the definitional terms applied to profits across the different companies, we have chosen to use revenue as a proxy for earnings in our statistical analysis.

- 5.22 Although it does not prove that record companies rely solely on current earnings for investment, it suggests that, in general, more money is spent on A&R when the companies do well and spending is reduced when performance declines.
- 5.23 Another piece of empirical data on record company investment comes from a recent survey of the BPI's Independent members.<sup>57</sup>
- 5.24 This survey indicated that internally generated funds were relied on exclusively by 51% of independent record companies. The survey also found that 80% of independent record companies felt that future prospects were hampered by a lack of access to finance.
- 5.25 The majority of companies had not actually tried to obtain external finance, but of those that had, some 36% were unsuccessful. The main reasons for this failure cited in the survey were a lack of understanding of the industry (i.e. possible information asymmetry) and that the industry was perceived by lenders as high risk.

### **Conclusion**

- 5.26 The assertion that a retrospective extension of copyright term will have no impact on the amount of music created is flawed in that it relies on the concept of perfect capital markets. There are a range of imperfections in capital markets, such as information asymmetries and transaction costs, that are exacerbated by the nature of the recorded music industry.
- 5.27 The implication of the imperfections in capital markets for the recorded music industry is that investment in new artists is typically financed through retained earnings rather than external investment. Our analysis of actual record company investment is consistent with this hypothesis.

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<sup>57</sup> BPI 2007, The Business Environment for Independent Record Companies: BPI Independent Members' Survey: Summary of Findings.