Lord Goodlad
Chair
Secondary Legislation Scrutiny Committee
House of Lords
London
SW1A 0PW

30th April 2014

Dear Lord Goodlad,

The Copyright and Rights in Performances (Personal Copies for Private Use) Regulations 2014 (the "Regulations")

I write in relation to the Regulations.

As you will be aware, the UK Music industry has serious concerns about the introduction of the Regulations without a compensation scheme for rights-holders also being implemented. I recently communicated these concerns to the Joint Committee on Statutory Instruments (the "**JCSI**") in a letter dated 11th April 2014, a copy of which was also sent to both you and the members of the Committee.

I understand – further to correspondence between the Secondary Legislation Scrutiny Committee (the "**Committee**") and my colleague, Tom Kiehl – that the Committee is due to review the Regulations shortly.

I further understand that in doing so the Committee is willing to consider submissions made by UK Music on the matter and we are pleased and most grateful that the Committee is giving this serious consideration.

As I set out in the letter to the JCSI, the Government has justified its refusal to introduce a compensation scheme on the basis that the harm suffered to rights-holders is minimal, and that in any event, rights-holders ought to be able to benefit from the additional value that consumers derive from private copying as it will be priced into the market through increased pricing or sales.

However, no proper evidence which supports this position has been submitted by the Government.

On the contrary, UK Music has commissioned a detailed consumer survey (which considers consumers' willingness to pay for CDs depending on the type and extent of copying they can undertake in respect of those CDs) as part of its efforts to estimate the harm caused to rights-holders and other stakeholders in the music industry. Economic experts Compass Lexecon have been engaged to analyse the results of that survey and produce a report setting out their findings.

A summary of those findings is enclosed with this letter. As you will see from that summary, the findings of the survey are that the harm that will be caused to music business revenues by the exception includes the following:

1. Consumers are willing to pay £8.97 more for CDs which allow them to make unlimited *licensed* copies, than for CDs which of which they are allowed to make *unlimited* unlicensed copies of. This figure translates into a **£2.4 billion** loss in revenue for the period between 2006 and 2012.

2. Consumers are willing to pay £0.72 to make one licensed digital copy of a CD. Taken across the number of CDs sold between 2006 and 2012 and the likely number of digital copies that consumers would be expected to make of those CDs, the potential value of what consumers would be prepared to pay for such copying amounts to between **£100 million and £624 million**.

3. By requiring that all CDs are sold with the right to make unlimited copies, the private copying exception introduced by the Regulations will cause a loss of potential revenue to the music industry by approximately **£58 million per year**.

The survey tests the operation of 'pricing-in' in the market and demonstrates that *none* of these losses will be compensated by 'pricing-in'.

The findings are set out in considerably more detail in the summary report, but it will hopefully be clear from the above that the harm the UK Music industry will suffer as a result of the introduction of the Regulations will be far more than minimal and, in fact, will be significant.

The summary report assumes that rights holders can fully enforce their rights and CDs would have been sold without a licence from the rights holders to permit private copying prior to the Regulations being implemented.

I have also enclosed a copy of a graphic from our trade magazine, Music Week, which illustrates that physical albums, predominantly made up of the sale of CDs, still account for 60-70% of the Official Charts Company sales figures.

In addition to the above, I would also like to draw your attention to comments made by Hayley Conboy, Head of Enterprise Policy at the CBI, on 28 April 2014, who said the effect of Government policy in this regard and generally, any future exceptions "*could compromise effective licensing models*".

In view of the above, I should be most grateful if the Committee would give some consideration to the Government's justification of the introduction of the Regulations in their current form. As I stated in my letter to the JCSI, it is our view that the implementation of the Regulations without the introduction of a compensation scheme for rights-holders would clearly be *ultra vires* and would inappropriately implement European Legislation.

Yours sincerely

Jo Dipple

Jo Dipple
Chief Executive Officer, UK Music

Copied by email to:

Mr George Mudie, MP Chair, Joint Committee on Statutory Instruments

Dr Ros Lynch, Director, Copyright and IP Enforcement Director of the Intellectual Property Office

Members of the Joint Committee on Statutory Instruments and House of Lords Secondary Legislation Scrutiny Committee

Estimation of the harm caused by private copying exception based on survey evidence

Executive summary

Tim Battrick, Alex Davie, Patricia Lorenzo, Alejandro Requejo, Andrew Wynn
Confidential

30 April 2014

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1.   Introduction and background

An introduction to Compass Lexecon and FTI Consulting

1.1   FTI Consulting is a global advisory business.

Compass Lexecon is a wholly owned subsidiary of FTI Consulting, Inc. We are an economic consulting firm that provides law firms, corporations and government clients with clear analysis of complex economic and finance issues. We have been involved in a broad spectrum of matters related to economics and finance – providing critical insight in legal and regulatory proceedings, strategic decisions and public policy debates.

1.2   FTI Consulting and Compass Lexecon have more than 4,300 professionals worldwide, including Nobel Prize winners and other leaders in their fields.

1.3   The European team includes more than 500 economists based in Brussels, London, Madrid and Paris. Many hold PhDs from leading economics departments, and several hold academic positions at European universities.

1.4   Our past clients include major multi-national firms as well as the European Commission and national competition authorities and regulators.

The proposed PCE

1.5   The UK Government launched a consultation into the future of UK copyright law in 2011, in which it proposed to introduce a "Private Copying Exception" or "PCE", which would render it lawful for consumers to make copies of certain copyright works that they had lawfully acquired (for example, CDs containing music) for private use only. The legal basis for the PCE arises out of Article 5(2)(b) of the EC Directive 2001/29/EC (the "Copyright Directive") which enables member states to provide a limited exception from the general strict copyright protection required for copies of works made by a *"natural person for private use and for ends that are neither directly nor indirectly commercial…"*.

1.6   However, it is a requirement of this provision that where a member state provides for a PCE, it must also provide for *"fair compensation"* to be provided to rights holders in relation to the harm arising to them from the private copying in question, unless such harm would be minimal.

1.7 In December 2012, the Government published a report entitled *Modernising copyright: A modern, robust and flexible framework* (the "MC Report") and an impact assessment (the "Impact Assessment") which set out the Government's estimates of the economic impact of its proposed changes to UK copyright law. On 27 March 2014 the Intellectual Property Office published a revised Impact Assessment.

1.8 In the MC Report and Impact Assessment the Government acknowledges that the introduction of the PCE will cause harm to rights holders[1], but suggests that this harm will be minimal.[2]

Our instructions

1.9 We have been instructed by Olswang LLP on behalf of UK Music and its members to assess the harm resulting from private copying, which will be legitimated following the introduction of the PCE, as it relates to CDs. To do this, we have estimated the harm caused to the revenues of the music industry from CD sales (those being the total amounts paid by consumers for CDs) following the introduction of the PCE. A proportion of this harm will be suffered by the rights holders. The remainder will be suffered by other stakeholders.

1.10 We agreed with UK Music that our approach would be to commission a survey about the buying decisions of music consumers in the UK in relation to CDs and the copying of CDs. We have used choice modelling, a recognised and highly respected economics tool, to analyse the responses received.

1.11 This document summarises the estimated harm following the PCE that we calculate based on the survey results. In this note, we do not consider all sources of harm to rights holders. For example, we do not consider lost revenue from sources other than lost CD sales.

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[1] Impact Assessment (both in its original and updated forms) at page 2, under heading "Description and scale of key monetised costs by main affected groups"

[2] Impact Assessment (both in its original and updated forms) at page 1, under heading "What are the policy objectives and the intended effects?"

2.   Executive summary

Introduction

2.1   In March 2014, we commissioned a detailed survey of potential consumers of music to determine the extent to which they were willing to pay for the rights which would be conferred by statute under the PCE. Using the responses collected, we used choice modelling techniques to determine what consumers would be prepared to pay for:

(1)   CDs with or without the ability to make digital copies (whether legally or practically); and

(2)   individual digital copies of CDs previously acquired by the consumer.

2.2   In the choice modelling exercises, interviewees were presented with a number of alternatives, each defined by a different combination of attributes (such as a CD that cannot be copied and a CD that can be legally copied once) and asked to choose their preferred alternative. The responses to these types of questions allow us to understand consumers' willingness to pay for a single attribute (such as the ability to make one licensed copy of a CD). Choice modelling techniques also allow us to estimate the demand for a product with different attributes, for instance, the demand for a CD that cannot be copied, at different possible price points.

2.3   Within the choice modelling family there are a number of different techniques. In this case we have implemented a technique known as discrete choice experiment ("**DCE**"). The academic literature over recent years has largely converged around DCE as it is the methodology that most closely mirrors what people face in real life when choosing between products.[3] More information about choice modelling is set out at section 3 of this document.

2.4   By analysing the responses to the survey, we calculated indicative figures of the value to the music industry of the rights which are being conferred (for free) by the PCE. This reflects the harm suffered by the industry as a result of the PCE.

Identifying harm

2.5   When considering the value of the rights being conferred by the PCE it is necessary to

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[3]   For a detailed discussion on choice modelling and its application for estimating consumers' willingness to pay see the study commissioned by the Competition Commission to Accent titled "Review of Stated Preference and Willingness to Pay Methods. April 2010". Available at: http://webarchive.nationalarchives.gov.uk/+/http://www.competition-commission.org.uk/our_role/analysis/summary_and_report_combined.pdf

consider separately the position in respect of:

(1)   CDs which were sold *before* the PCE comes into force. These CDs would have been sold on the basis that they were to be listened to, but that there was no licence from the rights holders to permit the private copying thereof. The PCE would permit such copying in the future and legitimise private copies which had already been made. Thus, the PCE would act to deprive rights holders from the revenue they could make from selling licences for these copies, should they wish to do so; and

(2)   CDs which are sold in the future. Every CD sold in future will be sold with the rights conferred by the PCE. This will prevent rights holders selling separate versions of CDs directed at those who do and do not wish to pay for the right to make digital copies. Such market segmentation would maximise revenues for rights holders. The PCE prevents this.

2.6   It is of course true that rights holders do not sell licences for private copies made by consumers of CDs or segment the market by selling different versions of CDs that can and cannot be copied. This is because the current state of the law means that it is impossible for them to enforce their intellectual property rights fully in a cost effective way.

2.7   We understand that, under the Copyright Directive, the harm which is to be assessed is the harm arising from the unlawful private copying which is to be legitimised by the proposed PCE. Revenues from consumer segmentation would be available to rights holders if the unlawful private copying did not take place or, to put it another way, if rights holders could fully enforce their rights under the current law in a cost effective way. Indeed, all of the analysis in this note assumes that rights holders could fully enforce their rights.

Harm arising in respect of CDs sold before the PCE comes into force

2.8   Before presenting our calculation of harm, we note that it is not surprising that there is harm in respect of CDs sold before the PCE comes into force. Many consumers copy the CDs they buy to another CD, computer or any other devices that can play music (such as portable MP3 players and smartphones). According to our survey, 58% of respondents usually copy CDs in their collections to another device and, of those CDs that are copied, the respondents make on average 2.4 copies.

2.9   The harm arising in respect of CDs sold before the PCE comes into force can be assessed broadly in two ways.

2.10   First, there is the difference in the value which consumers would attribute to the CDs they have already bought (that is, a CD in respect of which private copying was not

legally permissible) and the value which consumers would attribute to the CDs after the PCE comes into force (that is, a CD in respect of which private copying will be legally permissible). Absent the PCE, rights holders could sell licences to consumers to reflect the additional rights the PCE provides. The difference between the values consumers attribute between these two types of CD indicates the fee rights holders could charge for these licences.

2.11   Our survey found a marked difference between what consumers would pay for each type of CD with an average willingness to pay of £16.33 for a CD with the ability to make unlimited licensed copies but only £7.36 for a CD with the ability to make unlimited unlicensed copies. In respect of all CDs sold between 2006 and 2012, this amounts to total lost revenue of **£2.4 billion**. (It should be remembered that as stated above, this assumes that rights holders could fully enforce their rights.)

2.12   Second, rather than charging a one-off licence fee for unlimited copying, the rights holders might instead charge consumers for each digital copy they wish to make.

2.13   Our survey found that, on average, respondents were willing to pay £0.72 to make one licensed digital copy of a CD (and smaller amounts in respect of further copies). Taken across the number of CDs sold between 2006 and 2012, and the likely number of digital copies consumers will wish to make of each of their CDs, we calculate that the potential value of licences consumers would be prepared to pay for such copying amounts to between **£100 million** and **£624 million**. (Again on the basis that rights holders could fully enforce their rights.)

2.14   These two methods use different approaches and measure somewhat different things, one the additional value consumers attribute to CDs in respect of the rights in question, the other the additional amount of revenue they would be prepared to pay for the copying rendered lawful by the PCE. But both indicate that the harm occasioned to rights holders in respect of the private copying to which the PCE relates is very substantial.

Harm arising in respect of CDs sold after the PCE comes into force

2.15   The harm arising in respect of CDs sold after the PCE comes into force can be assessed by reference to the fact that the PCE would act to prevent rights holders selling separate versions of CDs directed at those who do not want to pay for the right to make digital copies and those who do.

2.16   Our survey indicates that if unlawful private copying did not occur, rights holders would be able to sell CDs with licensed copying at a higher price than CDs without licensed copying.

2.17   By contrast, if the PCE permitted private copying, rights holders would be able only to sell CDs from which copying was permitted, preventing this segmentation of the market and so preventing rights holders from charging a premium for copying.

2.18   This situation is analogous to preventing airlines from offering seating of different classes (passengers pay a premium for the additional comfort of first class) or preventing publishers selling books in hardback (readers wanting to read the book before the paperback version is published pay a premium for a hardback copy). By introducing the PCE, the government prevents rights holders from charging a premium for the ability to copy music.

2.19   Consumers value the ability to make copies of music, whether these copies are licensed or unlicensed. We found that consumers value more highly the ability to make licensed copies. On average, consumers are willing to pay £4.50 for a CD that cannot be copied, £7.36 for a CD with the ability to make unlimited unlicensed copies and £12.19 for a CD that can be legally copied once.

2.20   By requiring all CDs to be sold with the right to make unlimited copies, the PCE will cause a loss to potential revenue to the industry of approximately **£58 million** per year.

2.21   Finally, we note that the Government has suggested that rights holders do not suffer significant harm arising from the private copying which the PCE addresses because consumers would have paid, and will pay, an additional amount for the products they have bought, and will buy, to reflect the additional utility they would obtain from the ability to make private copies (that is, that the value arising in respect of private copying was "priced in"). We consider that there are a number of flaws in their analysis, but in any event, the survey simply shows that this is wrong. The survey measures the additional amount that consumers would be prepared to pay to make private copies over and above what they did pay. Accordingly, it directly measures the revenue potentially denied to rights holders, that is the harm, arising from the PCE. As is set out above, that harm is very substantial.

## 3.	How a survey can be used to measure harm

Introduction

3.1	In this section, we explain how we have used a consumer survey to estimate how much consumers are prepared to pay for private copies and to measure the harm that the PCE would cause to rights holders. We first explain the use of choice modelling and then explain how we use this tool to calculate the harm caused by the PCE.

Choice modelling

3.2	In order to determine the harm to rights holders following the PCE, we have estimated UK consumers' willingness to pay ("**WTP**") for the ability to make digital copies of CDs using a stated preference method ("**SP**"). By WTP, we mean the maximum amount that each individual consumer is willing to spend to buy a product with a given characteristic. These methods are used to obtain individuals' preferences for alternatives (such as different numbers of copies) using survey data. SP methods allow the estimation of WTP for goods that are not available in the market (such as the WTP for a copyright licence that allows for an unlimited number of copies). These methods also allow the estimation of a hypothetical market share of each CD type offered in the market. Within the SP family we use DCE, a choice modelling method.[4] Choice modelling has become popular in economic and marketing literature. It has been widely used to aid decision making in the design of optimal pricing policies, to value intellectual property rights, to estimate demand for new services and to define relevant markets, amongst other uses.

3.3	To perform choice modelling, a sample of interviewees are presented with a number of alternatives, each one described by a different combination of attributes, and asked to choose their preferred alternative. The responses to questions such as these allow us to understand respondents' trade-offs and to calculate each individual's WTP for a single attribute.

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[4]	Within the choice modelling family there are a number of different techniques. In this case we have implemented a DCE. According to Louviere et al. (2010), among the different SP methods discrete choice experiments ("DCEs") are more general and consistent with economic demand theory. DCEs are based on random utility theory ("RUT"), which provides an explanation of the choice behaviour of individuals. RUT assumes a stochastic decision process in which consumers are assumed to choose one alternative out of a set of discrete alternatives that maximise their utility. Louviere, J.J., T.N., Terry and R.T. Carson (2010), Discrete choice experiments are not conjoint analysis, *Journal of Choice Modelling*, 3(3), pp 57-72.

3.4   Using these results, we can also estimate the demand for CDs with different attributes (i.e. with or without the ability to make copies) at any given price. Those consumers who would purchase the CD are simply those customers whose WTP exceeds the price at which the CD is offered. It is therefore possible to calculate prices for CDs with different attributes that maximise the overall revenues of the industry.

Application to our case

3.5   Our survey was performed on 11 and 12 March 2014. Our target population included UK consumers likely to buy original music products.[5] More than 2,000 respondents started the survey and 1,041 passed the screening questions[6] and completed the full survey. The survey consisted of two elements: (i) an initial questionnaire on the respondents' socio-demographic characteristics and their music consumption[7], and (ii) a series of choice experiments where respondents had to choose their most preferred product from a choice of products with varying characteristics. We asked each respondent to complete two choice modelling exercises of eight questions each.

3.6   The first exercise related to the sale of new CDs in the future (i.e. after the PCE has come into force). In this exercise respondents were asked to assume that they had decided to purchase some music and that they were considering buying a physical CD with 12 tracks. They were asked to choose between products characterised by:

(1)   the number of copies that could be made (which ranged from zero to unlimited copies);

(2)   the legal status of the copies (i.e. whether or not they have permission to make the copies); and

(3)   the price of the product (which ranged from 50p to £35).

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[5]   We defined our target population as those that have bought at least one album on CD or Vinyl, a single or a digital track in the last 12 months. We excluded from the analysis consumers that are not interested in the purchase of original music products because they would not be likely to modify their decisions regardless of the PCE.

[6]   One of the screening questions asked whether the respondent worked in the music industry. If so, they did not "pass" and were not able to complete the survey.

[7]   The initial questionnaire included 19 close-ended questions.

3.7   Figure 3-1 below shows one such choice.

Figure 3-1: Example of a choice modelling question for the first exercise

	Choice 1	Choice 2	Choice 3	None of these
Number of copies	0	1	Unlimited	I would not choose any of these products
Status of copies		Legal	Legal	
Price	£4	£7	£10	

3.8   The second exercise related to the CDs already owned (i.e. that were purchased before the PCE comes into force). Respondents were asked to assume that they are interested in copying a physical CD with 12 tracks that they have previously acquired, to use it on more than one device (for example, an MP3 player. a smartphone or a computer). This would be equivalent to buying a copyright licence for the CDs in the respondents' existing collections. Consumers then chose between alternatives characterised by:

(1)   the number of copies of that CD that can be made (which ranged from 1 to unlimited copies); and

(2)   the price of the copies (which ranged from 7p to £7).

3.9   The Figure 3-2 below shows one such choice.

Figure 3-2: Example of a choice modelling question for the second exercise

	Choice 1	Choice 2	Choice 3	None of these
Number of copies	1	5	Unlimited	I would not choose any of these products
Price	70p	£1.75	£5.25	

The harm caused by the PCE

3.10   From an economic perspective, the harm caused by certain conduct or an infringement of certain rights must be calculated as the difference between the profits of the injured party had the conduct or the infringement not occurred ("counterfactual" scenario) and the actual profits of the injured party ("actual" scenario).

3.11   We have estimated the harm caused by the PCE to the revenues of the music industry by comparing the revenues of the industry with the PCE in place ("actual" scenario) with the revenues that would be observed if the PCE would not come into force ("counterfactual" scenario), assuming (as stated above) rights holders could fully enforce their rights. A proportion of this harm will be the harm caused by the PCE to the revenues of the right holders.

3.12   We have considered the computation of harm separately in respect of CDs sold before the PCE comes into force (past sales or pre-PCE CDs) and CDs sold after the PCE comes into force (future sales or post-PCE sales). The harm suffered by the industry in respect of CDs sold before and after the introduction of the PCE both form part of the total harm the PCE will cause. We now describe the methodology and the main assumptions made to compute the harm in relation to pre-PCE CDs and post-PCE CDs respectively.

Harm arising in respect of CDs sold before the PCE comes into force

3.13   In respect of CDs sold before the PCE comes into force, retailers have already sold a number of CDs, which we shall call N, some proportion of which have been copied. The prices of these CDs cannot have factored in the ability to make licensed copies as the PCE had not come into force.

3.14   In the actual scenario (under the PCE), we assume that N CDs are sold and that these CDs can be copied an unlimited number of times.

3.15   In the counterfactual scenario (absent the PCE), we again assume that N CDs are sold but that rights holders can exercise control over private copying. This implies that they are able to charge consumers a fee for the right to make legal copies of CDs they already own, in addition to the price that they originally paid to purchase the CD.

3.16   The harm arising in respect of CDs sold prior to the PCE coming into force can be assessed broadly in two ways, depending on how we estimate the premium that right holders would charge. We call these approaches Options A and B.

3.17   <u>Option A</u>. There is a difference in the value which consumers would attribute to the CDs they did buy (that is, a CD in respect of which private copying was not legally permissible, which we call P_2) and the value which consumers would attribute to the CDs after the coming into force of the PCE (that is a CD in respect of which private copying will be legally permissible, which we shall call P_1). Absent the PCE, rights holders could sell licences to consumers to reflect the additional rights provided by the PCE. The difference between the values consumers attribute between these two types of CDs provides an indication of the fee which rights holders could charge for these licences. Mathematically, the harm computed in this way can be expressed as:

$$Harm = N \times [P_1 - P_2]$$

3.18 <u>Option B</u>. In respect of CDs already sold, rather than charging a one off licence fee for unlimited copies, rights holders could charge consumers for each digital copy they wish to make in the future. We shall call Y the number of copies made of each CD in consumers' collections and $\tilde{P}_C$ the price that rights holders would charge for each copy. Mathematically, the harm computed in this way can be expressed as:

$$Harm = N \times [(Y \times \tilde{P}_C)]$$

3.19 The survey provides evidence in respect of (i) the incremental value (or WTP) that consumers would attribute to the ability to make licensed copies ($[P_1 - P_2]$); (ii) the value (or WTP) that consumers attribute to each digital copy they make of CDs previously acquired ($\tilde{P}_C$); and (iii) the average number of digital copies that consumers made of CDs (Y). N can be determined based on historical data.

Harm arising in respect of CDs sold after the PCE comes into force

3.20 We again calculate the harm caused by the PCE as the difference between revenues from CD sales in the counterfactual scenario and the actual scenario.

3.21 In the counterfactual scenario (absent the PCE) we assume that illegal copying is impossible and rights holders can fully enforce their rights. In this scenario retailers can offer content with and without the right to make copies, at different prices. We also assume that retailers will set these prices so as to maximise their overall revenues.

3.22 After the PCE comes into force, all of the CDs sold will include a copyright licence. Thus, in the actual scenario we assume that consumers can legally copy all products as many times as they wish. All CDs are therefore sold at a single price, which we assume is set so as to maximise revenues.

3.23 In performing our calculations, we have considered two approaches. We call these approaches Options A and B. These approaches make different assumptions about the business models of the rights holders in the absence of the PCE.

3.24 In <u>Option A</u>, we assume that absent the PCE rights holders sell two products: (i) product 1 that does not include a copyright licence; and (ii) product 2 that incorporates a copyright licence and can be legally copied an unlimited number of times. Product 1 will be sold at a price which we shall call P_1 and product 2 will be sold at a price that we shall call P_2 and the quantities sold will be Q_1 and Q_2 respectively. Under the PCE retailers will only be able to sell one product, which we shall call product 3. Product 3 is sold at price P_3 and the quantity sold will be Q_3. In Option A, the harm can be mathematically expressed using the formula below:

$$Harm = [P_1 \times Q_1 + P_2 \times Q_2 - P_3 \times Q_3]$$

3.25   In <u>Option B</u>, we assume that rights holders charge prices that depend upon the number of copies that consumers wish to make of their CDs. This is equivalent to selling a CD that cannot be copied and separately selling an additional licence, at the same price, for each copy they wish to make. We shall call the price of the CD that will not be copied P_1 and the quantity sold Q_1. Assuming that the total number of copies in a CD's lifetime is Y, the price of a CD with a copying licence will be $P_1 + Y \times \tilde{P}_C$, where $\tilde{P}_C$ is the amount paid per copy. The number of the CDs that will be sold with a copying licence is Q_2. As in Option A, under the PCE, retailers sell one product, product 3, at price P_3 and the quantity sold is Q_3. In Option B, the harm can be mathematically expressed using the formula below:

$$Harm = \left[P_1 \times (Q_1 + Q_2) + \left(Y \times \tilde{P}_C \right) \times Q_2 - P_3 \times Q_3 \right]$$

3.26   As explained above, using the survey responses, we can estimate the demand of the CDs with different attributes. The demand provides the volume of sales of a particular product at a particular price. Using simulation techniques we can compute the optimum prices, being the prices that maximise revenues and the volume of sales of each product for each scenario (actual and counterfactual).[8]

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[8]   The optimum prices computed using simulation is not necessarily equal to the price that would be observed in the market.

4. Harm suffered by rights holders

Introduction

4.1 In this section, we summarise our results. First, we summarise the main results regarding consumers' WTP for the ability to copy CDs. Second, we summarise the estimated harm as result of the PCE.

Consumers positively value the ability to make copies of CD albums

Unlicensed copies

4.2 The survey results show that consumers are prepared to pay a higher price for a CD with the ability to make unlicensed copies than for the same CD that cannot be copied. In particular, consumers are prepared to pay on average £4.50 for a CD that cannot be copied whereas they are prepared to pay on average £7.36 for a CD that can be copied an unlimited number of times.

4.3 This finding is consistent with the fact that consumers copy the CDs they buy to another CD, computer or any other devices that can play music (such as portable MP3 player, smartphones, etc). According to the survey, 58% of respondents[9] usually copy the CDs in their collections and, of those CDs that are copied, the respondents make on average 2.4 copies of each CD. [10]

4.4 Regarding the number of CDs purchased in the past, the survey indicates that approximately 34% of the CDs sold in the past have been copied at least once.[11]

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[9] 603 respondents.

[10] Of the CDs copied in the past, on average respondents have copied each CD 1.62 times and they think they will copy them 0.76 times again in the future.

[11] The respondents that normally copy the CDs they buy into a different format have copied on average half of the CDs in their collections. The respondents that normally copy CDs have obtained 11 albums in the last 12 months, whereas the respondents that do not normally copy the CDs they buy have obtained on average 7 albums in the last 12 months. It follows that 34% of CDs sold in the past have been copied at least once: 50% albums x 11 copies x 603 respondents that copy the CDs / (11 copies x 603 respondents that copy the CDs + 7 copies x 438 respondents that do not copy the CDs).

Licensed copies

4.5 The survey results show that consumers derive higher utility from making licensed copies than from making unlicensed copies. That is, consumers are prepared to pay a higher price for a CD album with the ability to make licensed copies as compared with the same CD album that only allows for unlicensed copies. In particular, consumers are prepared to pay on average £7.36 for a CD album with the ability to make unlimited unlicensed copies whereas they are prepared to pay on average £12.19 for a CD album that can be legally copied just once.

4.6 Consumers' WTP for the ability to make licensed copies increases with the number of copies. On average, consumers are prepared to pay £12.19 for a CD that can be legally copied once, £13.06 for a CD that can be legally copied up to five times and £16.33 for a CD album that can be legally copied an unlimited number of times.

Copies of CDs previously acquired

4.7 The survey responses show that consumers are prepared to pay for the ability to make licensed copies of CDs in their collection and their WTP increases with the number of copies. In particular, consumers are willing to pay on average £0.72 for one licensed copy, £2.03 for up to five licensed copies and £3.36 for unlimited licensed copies of a CD album in their collection.

Harm arising in respect of CDs sold before the PCE comes into force

Option A

4.8 We calculate that, on average, consumers are prepared to pay an additional £8.97 per CD for a CD with the ability to make unlimited licensed copies, as compared to a similar product with the ability to make unlicensed copies. We assume that respondents would be willing to pay this additional amount for CDs that have been copied.

4.9 Table 4-1 below shows the estimated revenue lost by the industry taking into account the additional amount that consumers are prepared to pay for a CD with the ability to make unlimited licensed copies.

Table 4-1: Estimated lost revenue in respect of CDs sold before the PCE

Year of ale	CDs sold (thousand) [A]	CDs copied (thousand) [B] = [A] x 34%	Revenue lost (£ million) [C] = [B] x £8.97
2006	151,415	51,952	466
2007	131,417	45,091	404
2008	122,973	42,193	378
2009	112,485	38,595	346
2010	98,545	33,812	303
2011	86,177	29,568	265
2012	69,405	23,814	214
Total	**772,417**	**265,025**	**2,376**

Note: Our survey indicates that 34% of CDs sold have been copied.
Source for CD sales statistics: BPI Yearbooks for relevant years.

4.10 In respect of all CDs sold between 2006 and 2012, we calculate that the total lost revenue amounts to £2.4 billion. The actual lost revenue is not restricted to CDs sold in this period, it could be extended to years prior to 2006.

Option B

4.11 According to the survey responses, only 34% of CDs acquired by consumers have been copied in the past. In addition, consumers may copy other CDs they own after the PCE comes into force and once the making of private copies for personal use is permitted.

4.12 We have considered two scenarios for the number of copies of existing CDs that will be made:

(1) consumers will not make copies of CDs that they have not copied previously. For the CDs that have been copied in the past, they will make on average 0.76 copies in the future and we estimate that consumers are willing to pay £0.38 per CD for these copies; and

(2) all CDs in consumers' collections will be copied. For those CDs that have been copied in the past we again assume that they will make on average 0.76 copies and are willing to pay £0.38 per CD for these copies. For those that have not been copied in the past, we assume that consumers will make the average number of copies they usually make in a CD lifetime (2.4 copies). On average, consumers are willing to pay £1.03 for such copies.

4.13 Table 4-2 and Table 4-3 below show the estimated revenue lost by the industry in these two scenarios. We calculate these amounts in respect of CD sales between 2006 and 2012. The actual lost revenue is not restricted to CDs sold in this period it could be extended to years prior to 2006.

Table 4-2: Lost revenues from sales of CDs before the PCE comes into force if only those CDs that have been copied in the past will be copied again

	CD sales (thousand) [A]	CDs previously copied (thousand) [B] = [A] x 34%	Lost revenue (£ million) [C] = [B] x £0.38
2006	151,415	51,952	20
2007	131,417	45,091	17
2008	122,973	42,193	16
2009	112,485	38,595	14
2010	98,545	33,812	13
2011	86,177	29,568	11
2012	69,405	23,814	9
Total	**772,417**	**265,025**	**100**

Table 4-3: Lost revenues from sales of CDs before the PCE comes into force if all CDs will be copied

	CD sales (thousand) [A]	CDs not previously copied (thousand) [B] = [A] x 66%	Lost revenue (£ million) [C] = [B] x £1.03
2006	151,415	99,463	103
2007	131,417	86,326	89
2008	122,973	80,780	84
2009	112,485	73,890	76
2010	98,545	64,733	67
2011	86,177	56,609	59
2012	69,405	45,591	47
CDs not previously copied	**772,417**	**507,392**	**525**
CDs previously copied (from Table 4-2)			100
Total			**624**

4.14   The lost revenue is therefore between £100 million and £624 million.

4.15   This amount is less than we calculate under Option A. The estimated harm under
        Options A and B differ for two reasons:

        (1)   In Option A, we calculate the additional revenue that rights holders would obtain
               if they were able to charge a different price in respect of CDs that can be copied
               legally an unlimited number of times, as compared to CDs that can be copied an
               unlimited number of times but illegally.

        (2)   In Option B, we calculate the additional revenue that rights holders would obtain
               if (a) consumers make the number of copies they think they will make in the
               future (unlike Option A where we assume an unlimited number of copies) and
               (b) assuming a business model in which consumers pay for each additional
               copy.

Harm arising in respect of CDs sold after the PCE comes into force

Option A

4.16   Table 4-4 below shows the estimated revenues in the actual and counterfactual
        scenarios. The estimated harm is the difference between the two. As reflected in the
        table, the prices that maximise the industry revenues (optimum prices) in both
        scenarios are larger than the current prices of CDs. As discussed above, the reason is
        that the survey determines solely the customers' WTP for a CD and the optimum prices
        thus determined are not mediated by the effects of competition which would be felt in
        the real world. The price curve produced reflects a world where record companies could
        sell their CDs directly to the public without any competitive effects.

4.17   This artificiality does not matter for the purposes of our analysis because we are not
        seeking to determine the actual optimum price in the two competing scenarios but
        rather the difference in aggregate revenue between them. Since both prices are based
        on the same factors, the artificiality mostly cancels out leaving only the difference in
        aggregate revenue, which is likely to genuinely reflect the harm occasioned to rights
        holders by the PCE in the real world.

Table 4-4: Calculation of harm in respect of CDs sold after the PCE comes into force (Option A)

	Optimum price (£) [A]	Quantity (thousand) [B]	Revenue (£ million) [C] = [A] x [B]
Actual scenario			
CD with licenced copying	22.80	52,554	1,198
Total [A]		**52,554**	**1,198**
Counterfactual scenario			
CD without copying	22.70	8,613	196
CD with licensed copying	23.30	45,333	1,061
Total [B]		**53,946**	**1,256**
Harm per year [C] = [B] – [A]			**58**

4.18 With the PCE, the optimal price for a CD with licensed copying is £22.80. The price could be increased beyond this, but it would not be advantageous to so as this would result in lost sales. However, in the absence of the PCE, the rights holders could sell two versions of the CD. The version that offers copying could be sold at a higher price (£23.30) and many consumers would be willing to pay this price. To ensure that those consumers not willing to pay this amount nonetheless bought a CD, a cheaper version (at £22.70) could also be offered.

Option B

4.19 The table below shows the estimated revenues in the actual and counterfactual scenarios. The counterfactual we assume here is for Option B, the price of a CD with the ability to make licensed copies is £1.03 higher than the price of a CD that cannot be copied.[12]

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[12] According to the survey responses the average number of copies they usually make in a CD lifetime is 2.4. On average, consumers are willing to pay £1.03 for these copies.

Table 4-5: Calculation of harm in respect of CDs sold after the PCE comes into force (Option B)

	Price (£) [A]	Quantity (thousand) [B]	Revenue (£ million) [C] = [A] x [B]
Actual scenario			
CD with licenced copying	22.80	52,554	1,198
Total [A]		**52,554**	**1,198**
Counterfactual scenario			
CD without copy	22.40	9,083	203
CD with licensed copying	23.43	44,937	1,053
Total [B]		**54,020**	**1,256**
Harm per year [C] = [B] – [A]			**58**

4.20   With the PCE, the optimal price for a CD with licensed copying is £22.80. The price could be increased beyond this but it would not be advantageous to so as this would result in lost sales. However, in the absence of the PCE, the rights holders could sell two versions of the CD. The version that offers copying could be sold at a higher price (£23.43) and many consumers would be willing to pay this price. To ensure that those consumers not willing to pay this amount nonetheless bought a CD, a cheaper version (at £22.40) could also be offered.

4.21   The tables above show that our conclusions are similar in the case of both Option A and Option B. In both cases, the harm is approximately £58 million per year.

Estimation of the harm caused by private copying exception based on survey evidence

Methodology and data underlying the executive summary prepared by FTI Consulting and Compass Lexecon dated 30 April 2014 (the "Summary Report")

Tim Battrick, Alex Davie, Patricia Lorenzo, Alejandro Requejo, Andrew Wynn
Confidential

6 May 2014

Table of contents

1.   Introduction

1.1   This note is prepared in support of and should be read in conjunction with our Summary Report. This note includes:

(1)   a description of the econometric methodology we have used to estimate the harm to rights holders as result of PCE;

(2)   an explanation of our survey sample and design;

(3)   an explanation of how we calculated the optimum price for the purposes of the Summary Report; and

(4)   the survey questions and the instructions provided to respondents in answering the choice modelling questions.

2.   Econometric methodology

2.1   In describing the econometric methodology we have used to estimate the harm to rights holders as result of private copying, as will be legitimised by the private copying exception ("PCE"), we focus in particular on how we estimate UK consumers' willingness to pay ("WTP"), using a stated preference ("SP") method, for (a) new CDs of which different numbers of copies can be made and (b) licences to make copies of CDs in consumers' collections. This method is used to obtain individuals' preferences when given a choice of different alternatives.

Discrete choice experiments

2.2   According to Louviere et al. (2010), among the different SP methods, discrete choice experiments ("DCEs") are more general and consistent with economic demand theory.[1] DCEs are based on random utility theory ("RUT"), which provides an explanation of the choice behaviour of individuals. RUT assumes a stochastic decision process in which consumers are assumed to choose one alternative out of a set of discrete alternatives that maximise their utility. We approximate the random utility model using a mixed logit model. Following Train (2009), the utility of person n from alternative j is specified as:[2]

$$U_{nj} = \beta_n x_{nj} + \varepsilon_{nj}$$

Where:

i. x_{nj} are observed variables (e.g. the status of the legal copies, the number of copies, the price of the CD, etc.) that relate to the alternative j and decision maker (survey respondent) n;

ii. β_n is a vector of coefficients[3] of these variables for person n representing that person's tastes; and

iii. ε_{nj} is a random term that is an independently and identically distributed (iid) extreme value.

2.3   In a mixed logit model, the coefficients β_n vary over decision makers in the population with density f (β), which is a function of parameters θ that represent, for example, the

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[1]   Louviere, J.J., T.N., Terry and R.T. Carson (2010), Discrete choice experiments are not conjoint analysis, *Journal of Choice Modelling*, 3(3), pp 57-72.

[2]   Train, K. (2009), *Discrete Choice Methods with Simulation*, Cambridge University Press, New York, 2nd edition.

[3]   The coefficient of an attribute in the utility function is also known as the "partworth" of an attribute.

mean and covariance of the coefficients in the population. Unlike the more standard logit model, mixed logit models provide a flexible specification to represent the distribution of preferences in the population and, thus, to take into account the heterogeneity among respondents' tastes and to allow for unrestricted substitution patterns (i.e. relaxing the independence from irrelevant alternatives assumption). Mixed logit models require the specification of a distribution function for each of the coefficients of the utility function that are assumed to be random.[4] The higher a utility function, the more value a consumer would attribute to a certain product. In most applications, these distributions are normal or lognormal (the latter is useful when the sign of the coefficient is the same for all individuals).[5]

Application to this case

2.4   The estimation of the logit models requires information on decisions made by individuals and the factors that can influence these decisions. We collect this information through a survey that simulates purchasing decisions made by individuals. Purchasing decisions consist of a choice made from a finite set of alternatives. As explained below, in this particular case, each offering is defined by different attributes such as the number of digital copies that can be made, the legal status of the copies and the price of the CD or the price of the copyright licence. Survey data simulates the choice process ("choice experiment"); respondents are presented with a number of alternatives, each one described by a different combination of attributes, and are asked to choose their preferred alternative.

2.5   We have estimated two utility functions: (a) one reflecting consumers' utility from purchasing CDs with different copyright options; and (b) one reflecting consumers' utility from making copies of CDs already in their collections.

2.6   In the first case, we have estimated the following utility function:[6]

$$U = \alpha * Price +$$
$$\delta_1 * 1\ licensed\ copy +$$
$$\delta_2 * Up\ to\ 5\ licensed\ copies +$$
$$\delta_3 * Unlimited\ licensed\ copies +$$
$$\varphi_1 * Unlimited\ unlicensed\ copies +$$
$$\beta * None\ of\ these$$
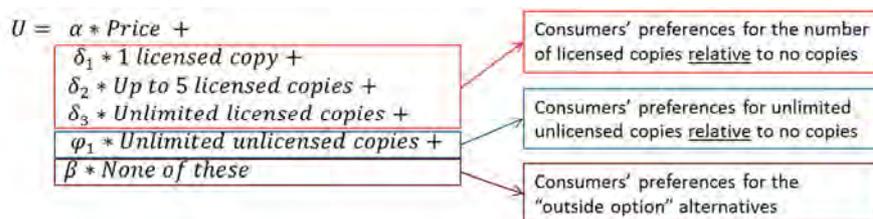
- Consumers' preferences for the number of licensed copies <u>relative</u> to no copies
- Consumers' preferences for unlimited unlicensed copies <u>relative</u> to no copies
- Consumers' preferences for the "outside option" alternatives
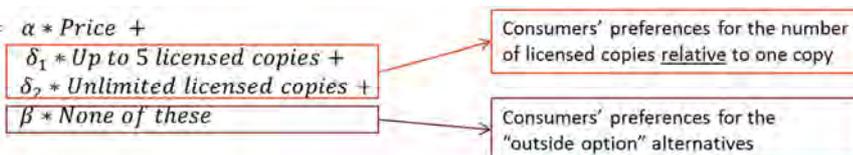
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[4]   Some of the coefficients can be fixed.

[5]   See, for example, Goett, A. A., K., Hudson and K., Train (2000), "Customers' Choice Among Retail Energy Suppliers: The Willingness-to-Pay for Service Attributes", *The Energy Journal*, 21(4), 1-28.

[6]   We omit the sub index n (individuals) for the sake of simplicity in notation.

Where:

i. $1\ licensed\ copy_j, Up\ to\ 5\ licensed\ copies_j, Unlimited\ licensed\ copies_j$, are equal to 1 if the CD includes a copyright licence that allows for one copy, up to 5 copies or an unlimited number of copies respectively. The coefficients δ_1, δ_2 and δ_3 represent consumers' preferences for each of those licensed copies relative to, or over, a CD that cannot be copied.

ii. $Unlimited\ unlicensed\ copies_j$ is equal to 1 if the alternative j does not include a copyright licence but that in practice can be copied an unlimited number of times. The coefficient φ_1 represents consumers' preferences for a CD that can be unlawfully copied relative to an alternative that cannot be copied.

iii. $None\ of\ these_j$ is equal to 1 if the alternative j is the option of not choosing any of options shown to respondent, and 0 otherwise. The coefficient β represents individuals' preferences for the "None of these" option relative to the rest of alternatives shown to respondents.

iv. $Price_j$ is the total amount that respondent will have to pay for the CD. The coefficient α measures consumers' sensitivity to the price of CDs.

v. ε_j is a random term that is an iid extreme value.

2.7 In the second case we have estimated the following utility function:[7]

$$U = \alpha * Price + \\ \delta_1 * Up\ to\ 5\ licensed\ copies + \\ \delta_2 * Unlimited\ licensed\ copies + \\ \beta * None\ of\ these$$

Consumers' preferences for the number of licensed copies <u>relative</u> to one copy

Consumers' preferences for the "outside option" alternatives

Where:

i. $Up\ to\ 5\ licensed\ copies_j, Unlimited\ licensed\ copies_j,$ are equal to 1 if the licence allows consumers to make, respectively, up to 5 copies or an unlimited number of copies of a CD that had been previously acquired. The coefficients δ_1 and δ_2 represent consumers' preferences for each of those copies relative to a licence that allows for one copy to be made of a CD previously acquired.

ii. $None\ of\ these_j$ is equal to 1 if the alternative j is the option of not choosing any of options shown to respondent, and 0 otherwise. The coefficient β represents consumers' preferences for the "None of these" option relative to the rest of alternatives shown to respondents.

iii. $Price_j$ is the total amount that a respondent will have to pay for the copies of the

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[7] We omit the sub index n (individuals) for the sake of simplicity in notation.

CD previously acquired. The coefficient α measures consumers' sensitivity to the price of making copies of a CD in their collections.

iv. ε_j is a random term that is an iid extreme value.

2.8   The WTP for a particular variable is calculated as the estimated coefficient of that variable divided by the estimated coefficient of the monetary variable (i.e. the price). We assume that the price coefficient is fixed and, therefore, that the distribution of the WTP has the same form as the distribution of the variable.

Computing the harm

2.9   We can use the results of estimating the equations above to compute the harm arising in respect of CDs sold before and after the PCE comes into force.

CDs sold before the PCE comes into force

2.10   <u>Option A</u>. The estimated incremental WTP for a CD that allows for licensed copies relative to a CD that allows for unlimited unlicensed copies (P_1-P_2) is calculated using the estimated coefficients of the first utility function as follows:

$$P_1 - P_2 \ = -\frac{\delta_3 - \varphi_1}{\alpha}$$

2.11   <u>Option B.</u> The estimated WTP for the copies of a CD previously acquired ($\tilde{P}_c$) is calculated using the estimated coefficients of the second utility function. We compute it in two steps. First, we calculate the WTP for one copy, up to five copies and unlimited copies as follows:

$$WTP_{One\ copy} \ = \frac{\beta}{\alpha}$$

$$WTP_{Five\ copies} = -\frac{\delta_1 - \beta}{\alpha}$$

$$WTP_{Unlimited\ copies} = -\frac{\delta_2 - \beta}{\alpha}$$

Second, we extrapolate these values in order to obtain the estimated WTP for the total number of copies that consumers make of the CDs in their collections (WTP_Y). We compute it using the estimated coefficients of the second utility function as follows:

$$\tilde{P}_c = WTP_Y \ = WTP_{One\ copy} * Y \text{ if Y<=1}$$

$$\tilde{P}_c = WTP_Y \ = WTP_{One\ copy} + \left[\frac{(WTP_{Five\ copies} - WTP_{One\ copy})}{4}\right] * (Y - 1) \text{ if Y>1\&Y<=5}$$

where Y is the number of copies that consumers make of the CDs in their collections.

CDs sold after the PCE comes into force

2.12   The first utility function allows us to compute the market shares of the CDs sold in a particular scenario (for instance, the market share of CDs that cannot be copied in a situation in which consumers could also buy CDs that can be legally copied). The market shares of the CDs sold in each scenario are calculated as the probability that decision makers choose those CDs at the prices defined for those CDs.[8] By multiplying the market share of the CDs type i.e. (S_i) times the total market size (M) we obtain the number of CDs sold (Q_i):

$$Q_i = M \; x \; S_i$$

2.13   We compute the total market size (M) using the current sales of CDs. In particular, we estimate the market share of CDs that allow for unlicensed copies based on respondents' preferences ($S_{CDs\ unlicensed}$), that is, the market share of CDs that are currently sold. Given the actual number of CDs sold in 2013, the total market size is calculated as follows:

$$M \; x \; S_{CDs\ unlicensed} = Q_{sales\ 2013} \rightarrow M = \frac{Q_{sales\ 2013}}{S_{CDs\ unlicensed}}$$

2.14   Option A. The market shares of the CDs sold in the actual and counterfactual scenarios are calculated as the probability that decision makers choose each CD given the price of that CD. We compute the market shares in each scenario for all CD prices ranging between £1 and £35.[9] Thus, in the actual scenario (under the PCE) we compute the market shares for all potential prices of a CD with the right to make copies, ranging between £1 and £35. In the counterfactual scenario, we compute the market shares for all potential combinations of prices of CDs with and without the right to make copies. The optimum price is the combination of prices that would result in the maximum possible revenues being obtained by the music industry.

2.15   Option B. Again, the market shares of the CDs sold in the actual and counterfactual scenarios are calculated as the probability that decision makers choose each CD given the price of that CD. As in Option A, in the actual scenario (under the PCE) we compute the market shares for all prices of a CD with the right to make copies ranging between £1 and £35. Unlike Option A, in the counterfactual scenario we compute the market shares for all potential prices for a CD that cannot be copied ranging between £1 and £35, but assuming that the gap between the price of the CD that can and cannot be copied is fixed. In particular, it is equal to the WTP for the copies of a CD, computed in the same way described above times the number of copies in a CD lifetime. The

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[8]   See Train, K. (2009), *Discrete Choice Methods with Simulation*, Cambridge University Press, New York, 2nd edition.

[9]   £35 is the maximum price of a CD included in the choice experiments.

optimum price is the combination of prices that would result in the maximum possible revenues being obtained by the music industry.

3. Survey sample and design

Sample description

3.1 Our target population included UK consumers who are likely to buy original music products. We defined our target population as those consumers who have bought at least one album on CD or Vinyl, a single or a digital track in the last 12 months.[10] We excluded from the analysis consumers that are not interested in the purchase of original music products because they would not be likely to modify their decisions regardless of the PCE.

3.2 FTI Strategy & Research undertook an online survey in March 2014 with over n=1,000 screened and representative respondents completing the full survey. Using our affiliate panel network, a quota based random selection process was undertaken from a pool of over 200,000 (recruited using a mixed telephone and online recruitment methodology) demographically profiled panel members in terms of age, gender and region to reflect official census data proportions. Given that this panel is representative of the UK population, a random sampling from this panel is therefore representative of our target population. Table 3-1 shows the distribution of the final sample by age and gender across the groups of respondents.

Table 3-1: Gender and age characteristics of the final sample

Criteria	Level	Respondents	%
Age	16-17 years	4	0.4%
	18-24 years	71	6.8%
	25-34 years	168	16.1%
	35-44 years	181	17.4%
	45-54 years	190	18.3%
	55-65 years	216	20.7%
	66 or over	211	20.3%
	Total	1,041	100%
Gender	Male	532	51.1%
	Female	509	48.9%
	Total	1,041	100%

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[10] We included a series of screening questions that allowed us to identify these individuals. See, in particular, question 6 in Appendix 4.

Survey design

Choice experiments

3.3   The survey consisted of two elements: (i) an initial questionnaire on the respondents' socio-demographic characteristics and their current music consumption patterns, and (ii) a series of choice experiments where respondents had to choose their most preferred products according to their preferences. We defined two types of choice experiment, the first one in which respondents have to choose among different CDs with 12 tracks and the second one in which respondents have decided to obtain licensed copies of the CDs they have bought in the past and they have to choose the preferred number of copies.

3.4   In each choice experiment, respondents were given a choice of four different options: in the first type of choice experiments respondents were given three CDs with different attributes and in the second type of choice experiments respondents were given three choices as to the way they could copy CDs already existing in their collections. In each type of choice experiment, consumers were also given a fourth option of not choosing any of the preceding three options. This fourth option is called the "none of these" option.

3.5   In the first type of choice experiment, the different attributes and alternative choices for each CD with 12 tracks in the choice experiments were as follows:

(1)   Number of copies: this indicates the number of times that the CD can be physically copied for a respondent's own use (not to be passed to friends, family or others). Being able to copy for these purposes includes being able to format shift a CD so that it can be played on several devices. This attribute has four levels: (i) not being able to make any copies, (ii) being able to make one copy, (iii) being able to make up to five copies, or (iv) being able to make unlimited copies.

(2)   Status of the copies: this indicates whether or not respondents are authorised by the rights holders to make copies of the CD. This attribute has two levels: (i) licensed copies (where the product includes a copyright licence that allows to make a certain number of copies of the CD) or (ii) unlicensed copies (where the CD does not include a copyright licence that allows the making of copies). Where there is an option to make unlicensed copies respondents were asked to assume that it would be feasible to make as many unlicensed copies as they wished.

(3)   Price of the CD: that is, the price respondents would have to pay for the CD with 12 tracks. We defined six alternative prices: 50p, £4, £7, £10, £20 and £35. This price range was designed to contain both realistic and extreme values (both high and low) to accurately estimate the price coefficient of the utility function.

3.6 In Table 3-2 we summarise these attributes and levels. In Figure 3-1 we show an example of a choice experiment.[11]

Table 3--2: Attributes and levels for the first type of choice experiments

Attribute	Level
Number of copies	0 copies
	1 copy
	Up to 5 copies
	Unlimited copies
Status of the copies	Licensed
	Unlicensed
Price of the CD	50 pence
	£4
	£7
	£10
	£20
	£35

Figure 3--1: Example of the first type of choice experiments

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[11] We designed 100 different choice experiments. Choice experiments were designed using the general method for efficient choice designs ("ChoicEff" SAS macro) developed by Zwerina, K., J. Huber, and W.F. Kuhfeld (2005), "A General Method for Constructing Efficient Choice Designs", SAS Technical Papers, available at http://support.sas.com/techsup/technote/mr2010e.pdf.

3.7   In the second type of choice experiment, the range of attributes and alternative choices for the copies of the CDs previously acquired in the choice experiments were as follows:

(1) <u>Number of copies</u>: this indicates the number of additional legal copies of a CD previously acquired that respondents can make for their own use. Each copy can be used in one or more different devices at a time. This attribute has three levels: (i) being able to make one additional copy, (ii) being able to make up to five additional copies, or (iii) being able to make unlimited additional copies.

(2) <u>Price of the copies</u>: that is, the price that respondent will have to pay for the additional copies. We defined six alternative prices: 7p, 70p, £1.75, £3.50, £5.25 and £7.

3.8   In Table 3-3 we summarise these attributes and levels. In Figure 3-2 we show an example of a choice experiment.[12]

Table 3--3: Attributes and levels for the second type of choice experiments

Attribute	Level
Number of copies	1 copy
	Up to 5 copies
	Unlimited copies
Price of the CD	7 pence
	70 pence
	£1.75
	£3.50
	£5.25
	£7

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[12]   As with the first type of choice experiment, we designed 100 different choice experiments. Choice experiments were designed using the general method for efficient choice designs ("ChoicEff" SAS macro) developed by Zwerina, K., J. Huber, and W.F. Kuhfeld (2005), "A General Method for Constructing Efficient Choice Designs", SAS Technical Papers, available at http://support.sas.com/techsup/technote/mr2010e.pdf.

Figure 3--1: Example of the first type of choice experiments

| | OPTIONS for the additional copies | | | NONE OF THESE |
	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Number of copies	Unlimited copies	1 copy	Up to 5 copies	I would not choose any of these alternatives
Price of the copies	£ 1.75	7 Pence	70 Pence	

Choice exercises

3.9 In order to estimate the harm following the PCE, we defined two different types of choice exercise. The first type of exercise related to consumers' preferences for CDs with or without the right to make copies and the second exercise related to consumers' preferences in relation to making copies of CDs in their collections. In each exercise, respondents were shown eight scenarios (i.e. they had to choose eight times): in the first four scenarios, respondents were asked to assume that it was possible to get free unlicensed copies of the product from elsewhere; in the remaining four scenarios, they were asked to assume that this was not possible.

3.10 More detailed descriptions of these exercises are set out below:

- **Exercise 1.** In this exercise we asked respondents to imagine that they were considering buying a CD with 12 tracks comprising of music that they like and the options shown in the choice experiment were the only that were available to them if they wanted to purchase the CD. They could choose not to purchase the CD on any of the terms offered.

- **Exercise 2.** In this exercise we asked respondents to imagine that they were interested in making a copy or copies of a CD with 12 tracks that they had previously acquired so that they would be able to use it on several devices and the options shown in the choice experiment were the only ones available to them. They could choose not to purchase the copies of the CD on any of the terms offered.

3.11   We used these exercises to estimate consumers' preferences for each product (new CDs and copies of CDs previously acquired) under different scenarios related to the availability of alternative music products.

4. Optimum prices

4.1 When we estimated the demand curve for the purposes of calculating the harm, we were able to take into account from the survey results competition from other music products (i.e. the same music in a different format, such as a digital track or a copy obtained from friends or relatives). However, the survey results did not allow us to take into account supply conditions, such as the number of competitors in a market. For this reason, the optimum price does not necessarily equal the actual price observed in the market.

4.2 To give an example, consider the price that consumers are prepared to pay for chocolate bars. There are two prices that determine the optimum price (being the one that maximises profits) of chocolate bars.

4.3 First, there is the willingness to pay on the part of customers. Above a certain price, customers will simply not be prepared to purchase the product even if it is unavailable elsewhere. A consumer may really want a chocolate bar and the local shop may be the only place nearby that sells them. A consumer may be prepared to pay £5 for the bars but not £6. At that point, he/she will do without.

4.4 Second, there is the effect of competition. A customer will not pay £5 for a chocolate bar if he/she knows that nearby he can get one for 60p.

4.5 Our survey elicited solely the first of these without any reference to the second. We are not seeking to determine the actual optimum price in the two competing scenarios (actual and counterfactual) but rather the difference in aggregate revenue between them. As a result, it is possible to show that ignoring competitive pressures has not had a significant effect on our conclusions. We do not present the full details here but, broadly speaking, since both prices are based on the same factors, the "artificiality" cancels out, leaving only the difference in aggregate revenue, which reflects the true harm suffered by the rights holders as a result of the PCE in the real world.

5. Survey questions and choice exercises

5.1 The following are the questions that each respondent was asked during the course of the survey. The first six questions were introductory and screening questions. If respondents chose certain answers (for example, if they said they were under 16, worked in the music industry or had not bought any music in the past 12 months, the survey closed and the respondent was unable to complete the survey. Only data from respondents who completed the full survey was used for the purposes of our analysis.

5.2 Note also that the full suite of choice cards has not been set out below.

ASK ALL - CLOSE IF CODE 1 OR 99
Q1. Which region do you live in?

1. Channel Islands
2. East
3. East Midlands
4. London
5. North East
6. North West
7. Northern Ireland
8. Scotland
9. South East
10. South West
11. Wales
12. West Midlands
13. Yorkshire & Humberside
99. Not On Map

ASK ALL – CLOSE IF AGE UNDER 16
Q2. How old are you?

1. 16-17 years
2. 18-24 years
3. 25-34 years
4. 35-44 years
5. 45-54 years
6. 55-65 years
7. 66 or over

ASK ALL
Q3. Are you?

1. Male
2. Female

Q4. What is your current working status?

1. Paid employment (30+ hours a week)
2. Paid employment (8-29 hours a week)
3. Paid employment (less than 8 hours a week)
4. Self-employed
5. Retired
6. Studying full time
7. Look after the house
8. Unemployed
98. Other
96. Prefer not to say

Q5. Do you work in any of the following occupations?

1. Advertising
2. Market Research
3. Journalism
4. Music industry
99. No, none of these

Q6. Over the past 12 months, have you bought any of the following?
Please select all that apply

1. Bought 1 or more albums, CD or Vinyl
2. Bought 1 or more singles
3. Bought 1 or more digital tracks
99. None of the above

QINFO - SHOW TO ALL RESPONDENTS
Before we ask you the next few questions, we'd like to define the following for you to ensure there is no uncertainty with the terms we're using:

Track/Song: A recording of a single song.
Album: A collection of tracks/songs that have been compiled by the music industry (as opposed to a collection that has been compiled privately).
To 'burn' a CD: This means to copy onto a blank CD (i) the contents of a CD and/or (ii) music downloads and/or (iii) tracks acquired from an online music service.
To 'rip' a CD: This means to copy the contents of a CD onto the hard disk of a computer.
Unlicensed copies: Copies of a CD that are made (including by burning or ripping physical copies

and by 'format-shifting') without the authorisation of the rightholders. Note that the physical CDs that you currently purchase/own do not customarily grant you a licence that allows you to copy or format shift that CD. Any copies that are currently made of a physical CD are therefore unlicensed and will infringe the rights of the rights-holders.

Licensed copies: Copies of a CD that are made (including by burning or ripping physical copies and by 'format-shifting') with the authorisation of the rightholders. Physical CDs that are purchased in the UK do not currently include a licence that allows you to copy or format shift that CD (although note that if you purchase a digital download from certain online service providers, for example, iTunes, you will have the right to make copies of this download). If a CD was purchased with the right to make unlimited copies, that would be a licensed copy.

Physical CD: A physical CD that you buy in an authorised shop (i.e. in a retail store or on the internet (for example, on Amazon)) in the form that is generally available.

Physical CD received as gift: A physical CD that you have received as a gift

Physical CD from an unauthorised seller: A physical CD bought from an unauthorised   seller (for example, from a street vendor)

Private CD burning: Creating a CD from the contents of another CD and/or music downloads and/or tracks acquired from an online music service

Music download purchase: A track or album that you downloaded from the internet in return for payment   for example, from ITunes)

Free music download: A track or album that you downloaded from the internet without payment being made (for example, from the PirateBay, KaT, IsoHunt)

Smartphone: A mobile phone with advanced features (including an audio player) such as an iPhone, Samsung Galaxy.

To 'format shift': the conversion of media files into different formats, including to play the media on different devices, for example when converting or ripping audio files on CDs into digital formats so they can be listened to on MP3 players.

Cloud music account: online service that allows you to store and stream music files such as iTunes Match, Spotify, Amazon Cloud Player, Google Player.

ASK ALL
Q7. Which of the following devices and capabilities do you have access to?
Please select all that apply

	You personally	Someone else in your house
1. In-home CD player		
2. In-home DVD player		
3. Capability to rip CDs		
4. Capability to burn CDs (integral to computer		
5. Capability to rip DVDs		
6. Capability to burn DVDs (integral to computer		
7. Access to a cloud music account		
8. Smart phone		
9. PC, laptop or tablet		
10. Portable MP3 player or iPod		
11. Portable CD player (i.e. a Discman)		
12. In-car CD player		
13. Games console (e.g. PlayStation.PlayStation		
14. Record player		
99. None of the above		

ASK ALL
Q9. Have you obtained or received music ALBUMS in the last 12 months in any of the following formats (for yourself or as a gift for others)?
Please select all that apply

1. Physical CD bought online or in a retail store
2. Physical CD received as gift
3. Physical CD from an unauthorised seller
4. Private CD burning
5. Music download purchase
6. Free music download
7. Copies of physical CD received from friends or family members
8. Copies of digital music received from friends or family members
99. No, none of the above **EXCLUSIVE & FIXED**

ASK IF Q9 = CODE 1-8
ONLY SHOW ANSWERS SELECTED AT Q9
SHOW DROP DOWN LIST FOR EACH STATEMENT WITH A RANGE OF 1 – 100+
Q10.How many of each format of ALBUMS have you obtained or received in the last 12 months?
Please select a number next to each in the drop down list.
If you can't remember please give you best estimate.

ASK ALL
Q11. Have you obtained or received music TRACKS/SONGS in the last 12 months in any of the following formats (other than part of an ALBUM) (for yourself or as a gift for others)?
Please select all that apply

1. Physical CD bought online or in a retail store
2. Physical CD received as gift
3. Physical CD from an unauthorised seller
4. Private CD burning
5. Music download purchase
6. Free music download
7. Copies of physical CD received from friends or family members
8. Copies of digital music received from friends or family members
99. No, none of the above **EXCLUSIVE & FIXED**

ASK IF Q11 = CODE 1-8
ONLY SHOW ANSWERS SELECTED AT Q9
SHOW DROP DOWN LIST FOR EACH STATEMENT WITH A RANGE OF 1 – 100+
Q12.How many of each format of TRACKS/SONGS have you obtained or received (Other than as part of as album) in the last 12 months?
Please select a number next to each in the drop down list
If you can't remember please give you best estimate.

ASK ALL
Q13. When you buy a physical CD, do you normally copy the CD (i.e. to another CD, computer or any other devices that can play music such as a portable MP3 player, smartphone, etc.)?

1. Yes
2. No

ASK IF Q13 = CODE 1
SHOW DROP DOWN LIST FROM 1% – 100%
Q14. Of all the CDs in your collection, approximately what percent have you made at least one full or partial copy of?
Please select from the drop down list

ASK IF Q13 = CODE 1
SHOW DROP DOWN LIST FROM 1 – 100+
Q15. Of the CDs that you have made at least one full or partial copy of, how many times have you copied each CD on average in the past??"
Please select from the drop down list

ASK IF Q13 = CODE 1
SHOW DROP DOWN LIST FROM 1 – 100+ ALSO INCLUDE "NONE" AS THE FIRST OPTION
Q16. Of the CDs that you have made at least one full or partial copy of, how many times you think you will copy each CD again in the future?
Please select from the drop down list

ASK ALL
SHOW DROP DOWN LIST FROM NONE – 10+
Q17. On average, how many hours do you spend ACTIVELY listening to music that YOU have chosen (either individually or in agreement with someone else) in a typical day?
Please select from the drop down list

ASK ALL – PLEASE USE THE FLASH YES / NO TOOL
Q18. Do you access music through an online music catalogue (e.g. Spotify, Napster, etc.)?
Please select one response

1. Yes
2. No

ASK IF Q18 – CODE 1
SC GRID PER ROW – RANDOMISE THE STATEMENTS – CODE 98 FIXED
Q19. Which of the following online music services do you regularly use?

	Music Service	Free service	Paid for service	Not used
1	Rdio	☐	☐	☐
2	Deezer	☐	☐	☐
3	Spotify	☐	☐	☐
4	LastFm	☐		☐
5	Blinkbox Music	☐	☐	☐
6	Amazon		☐	☐
7	iTunes		☐	☐
98	Others	☐	☐	☐

Choice exercises

Show to all respondents

[INFO 1 SCREEN]
We are going to show you a number of different scenarios that describe different products related to music.
For each scenario, we are going to ask you to consider the products shown and to choose your preferred one.
For the purposes of these exercises, please, assume that:
▪ You are spending your own money or your own time - do not choose an option if you wouldn't choose it in reality; and
▪ You have at your disposal any device required for listening to the music products (for example, a CD player).

ASK ALL – SHOW RESPONDENTS 4 DIFFERENT SETS ON A RANDOM LEAST FULL BASIS

[INFO 2 SCREEN – INSTRUCTIONS FOR EXERCISE 1 – FIRST HALF]

Exercise 1A – Purchasing an original CD with 12 tracks
Please assume that you are considering buying a CD with 12 tracks which contains music that you like and want to purchase. You will be given several options for which specific CD you can buy which are characterised by the following features:

- **Number of copies:** this indicates the number of times that you can physically copy the CD for your own use (not to be passed to friends, family or others). Being able to copy for these purposes includes being able to format shift it so that you can play it on several devices and not only on one CD player at a time..
  The options you may be presented with are (i) not being able to make any copies, (ii) being able to make one copy, (iii) being able to make five copies, or (iv) being able to make unlimited copies. Not all of these options will always be available.
- **Status of the copies:** this indicates whether or not you are authorised to make copies of the CD you buy. The options you may be presented with are (i) the ability to make licensed copies (where the product includes a copyright licence that allows you to copy the CD indicated certain number of times) or (ii) the ability to make unlicensed copies (where the CD does not include a copyright licence). Where there is an option to make unlicensed copies you should assume that it would be feasible to make as many illegal copies as you wish.
- **Price of the CD:** the price of the CD (with 12 tracks).

In these exercises, the options shown are the only ones available so that if you want to buy the CD, you can do so only on the basis of one of the alternatives shown.

You will always have an option called "None of these". If you select this option you are indicating that you would prefer not to acquire the CD on any of the terms offered.

That is, you could obtain access to the music by another means (for example, legally, by buying a digital track instead of a CD or listening to it through a music subscription service or illegally by getting a copy of the CD from someone or somewhere else (relatives/friends/the internet)).

SHOW TEXT FOR 2nd, 3rd & 4th LOOP: As per the previous question please select the option you would most likely to choose. To view the description again, please click here.

[INFO 3 SCREEN – INSTRUCTIONS FOR EXERCISE 1 – SECOND HALF]

Exercise 1B– Purchasing an original CD with 12 tracks, but free copies from relatives/friends or from the Internet are NOT available

We want you to once again assume that you are considering buying a CD which contains 12 tracks of music that you like and want to purchase.

As in the previous case, the options shown are the only ones available so that if you want to buy the CD, you can only do so on the basis of one of the alternatives shown.

Again, you will always have the option called "None of these". If you select this option you are indicating that you would prefer not to acquire the CD on any of the terms offered. This means that you could obtain access to the music by other means (for example, a licensed copy, by buying a digital track instead of a CD or listening to it through a music subscription service). However, unlike the previous exercises, it is impossible for you to get access to an unlicensed copy from relatives, friends, the internet or by burning or ripping the CD yourself.

SHOW TEXT FOR 2nd, 3rd & 4th LOOP: As per the previous question please select the option you would most likely to choose. To view the description again, please click here.

[INFO 4 SCREEN – INSTRUCTIONS FOR EXERCISE 2 – FIRST HALF]

Exercise 2A – Purchasing additional copies of a CD with 12 tracks previously acquired
Now we want you to assume that you are interested in making a copy/copies of a CD with 12 tracks that you have previously acquired. You wish to do this so that you will be able to use it on several devices (for example, an MP3 player. a smartphone, on your computer) and not only on one CD player at a time.
In this exercise, if you want to make the copy/copies you must choose from the alternatives shown and you will have to pay the indicated price. The alternatives shown are characterised by the following features:

- **Number of copies:** this indicates the number of additional legal copies of the CD that you can make for your own use. Each copy can be used in one or more different devices at a time. The options you will presented with include being able to make (i) one additional copy, (ii) up to five additional copies or (iii) an unlimited number of copies.
- **Price of the copies:** the price you will pay for the additional copy/copies.

In this exercise, you should assume that all the copies you are opting to purchase are legally authorised.
As before, you will always have an option called "None of these". If you select this option you are indicating that you would prefer not to pay for a copy/the copies on any of the terms offered. That is, you could obtain the copy by another means (for example, a licensed copy, by buying a digital track instead of a CD or listening to it through a music subscription service, or an unlicensed copy from relatives, friends, the internet or by burning or ripping the CD yourself)
SHOW TEXT FOR 2nd, 3rd & 4th LOOP: As per the previous question please select the option you would most likely to choose. To view the description again, please click here.

[INFO 5 SCREEN – INSTRUCTIONS FOR EXERCISE 2 – SECOND HALF]

Exercise 2b– Purchasing additional copies of a CD with 12 tracks previously acquired, but free copies from relatives/friends or from the Internet are NOT available
We would like you to again assume that you are interested in making a copy/ copies of a CD with 12 tracks that you have previously acquired. You wish to do this so that you will be able to use it on several devices (for example, an MP3 player. a smartphone, on your computer) and not only on one CD player at a time.

- As above, in this exercise, if you want to make the copy/copies you must choose from the alternatives shown and you will have to pay the indicated price. You should assume that all the copies you are opting to purchase are legally authorised.

Once again, you will always have an option called "None of these". If you select this option you are indicating that you would prefer not to pay for a copy/the copies on any of the terms offered. That is, you *could* (although not necessarily) obtain the copy by another means (for example, a licensed copy, by buying a digital track instead of a CD or listening to it through a music subscription service). However, unlike the previous case, this time assume that it is impossible for you to get an unlicensed copy of the CD from relatives, friends, the internet or by burning or ripping it yourself.

SHOW TEXT FOR 2nd, 3rd & 4th LOOP: As per the previous question please select the option you would most likely to choose. To view the description again, please click here.

INFO 6 – SHOW ALL
We'd now like to finish by asking some more questions about you in order to better understand your earlier responses.

ASK ALL
Q20. Which of the following best describe your marital status?

1. Married / civil partnership / co-habiting
2. Single (including divorced, separated, widowed)
96. Prefer not to say

ASK ALL
Q21. Which of these best describes your living situation?
Please select one response

1. Own home outright
2. Own home with mortgage
3. Shared ownership (e.g. part-buy part-rent assisted by a Housing Association)
4. Rent home through a Local Authority
5. Rent home through a Housing Association or Registered Social Landlord
6. Rent home through a private landlord or Letting Agency
7. Living at home with parents
98. Other
96. Prefer not to say
97. Don't Know

ASK ALL
Q22. How many people are there usually living in your household?
Please select one response

1. Just myself
2. 2 people
3. 3 people
4. 4 people
5. 5 people
6. More than 5 people

ASK ALL
Q23. In which of the following income bands does your gross annual household income fall?

1. Up to £5,000
2. £5,000-£9,999
3. £10,000-£14,999
4. £15,000-£19,999
5. £20,000-£24,999
6. £25,000-£29,999
7. £30,000-£34,999
8. £35,000-£39,999

9. £40,000-£49,999
10. £50,000-£74,999
11. £75,000 and above
96. Prefer not to say

Q24. If you have any comments to make in relation to these question topics, then please enter them below.