

The welfare effects of private copying levies

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Section 1

Introduction

The so-called private copying exception – i.e., the application of private copying in the legal system – remains a much debated issue under Intellectual Property law.¹ This debate originates in the 60s when new copying devices, such as compact cassettes or VHS, entered the market. These devices facilitated the mechanical reproduction of creative content in ways not seen before. Because it was then (and still remains) difficult and costly to monitor private copying using such devices, a consensus emerged in favour of introducing a copyright exception for private copying.

More recently, the digitisation of content and the large availability of data carriers has substantially increased the ability of consumers to reproduce protected content and, therefore, increased the impact of private copying.

In the European Union, the EU Copyright Directive 2001/29/EC² responded to this issue by providing the possibility for Member States to put in place a copyright exception for private copying on condition that right holders receive fair compensation.

Following the adoption of the EU Copyright Directive 2001/29/EC, the majority of Member States have chosen to implement the private copying exception through a system of remuneration that takes into account the associated loss of revenue in the form of a private copying levy – i.e., a levy on purchases of recordable equipment and/or media. Member States have implemented these provisions in different ways. Recently, this situation has led to criticism vis-à-vis the private copying remuneration system.

In April 2011, Oxera published an economic report, commissioned by Nokia, assessing the welfare effects of removing the private copying remuneration on the EU economy as a whole, as well as on consumers, device manufacturers, and rights holders.³ The main conclusion of the

¹ Private copying refers to the reproduction of audio, visual and audio-visual material for private use.

² Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the Information Society, L 167/10.

³ Oxera, "Is there a case for copyright levies? An economic impact analysis". April 2011. See: <http://www.oxera.com/main.aspx?id=9481>

Oxera report is that removing copyright levies has positive effects on total welfare.⁴

After the release of the Oxera report, AEPO-ARTIS, EUROCOPYA, GESAC, IFPI, IMPALA and SAA asked Compass Lexecon to analyse the report and to provide an economic opinion on it.

It results from this analysis that the claims about the welfare and other implications of removing the private copying remuneration system do not stand up to scrutiny. Neither do they take into account its impact on content creation. The aim of this study is to review the welfare implications of removing the existing private copying remuneration system in Europe on consumers, right holders and device manufacturers. The main conclusion of our study is that, contrary to what Oxera's report claims, the removal of the private copying remuneration will not produce the alleged benefits and will not result in a win-win situation for all market participants. In particular:

- The removal of the copyright remuneration will make right holders worse off. This is because they will lose the revenue generated by the levy and will not benefit from the unlikely increase in sales of recording devices resulting from the elimination of the levy. The negative impact on revenue will reduce the incentives to develop new, high quality content. **Hence the information available on the music industry in 19 European countries for the period 2000-2009 shows that there is a positive and statistically significant relationship between copyright levies and content creation in the music industry.**
- The effect on device manufacturers is twofold. Device manufacturers may, though not necessarily will, benefit from a cost reduction in the short term. However, in the long term, device manufacturers' revenues may decrease, as incentive for right holders to invest in new content will disappear following the removal of the copyright remuneration.
- The effect on consumers is ambiguous. Consumers could benefit in the short term from the elimination of private copying remuneration if that causes a significant reduction in the prices of electronic devices. However, they may be worse off in the long term if the removal of the copyright remuneration leads to less investment in content and hence reduces the availability and quality of content.

This report is structured as follows. In section 2, we provide a brief overview of the economics of private copying remuneration. In section 3, we analyse the welfare implications of removing the existing private copying remuneration system on consumers, device manufacturers and right holders. Finally, section 4 serves as the conclusion.

⁴ See Oxera (2011), page v, op. cit..

Section 2

The economics of private copying

From an economic theory perspective, movies, songs, books or magazines are typically referred as information goods.⁵ Information goods are characterised by having high fixed production costs but low marginal costs. The cost of producing the first copy of an information good is typically very high, while the cost of producing additional copies is small. This particular cost structure has an important implication. As it is well known, competition tends to bring prices down to the marginal cost of production, which is very small in the case of information goods. Consequently, if movies, songs, books, etc. can be copied freely, then the competitive process will bring the price of the original product and its copies down to zero. Creators of the original movies, songs or books will not be able to recoup the fixed costs of their investment and the creative process will be chilled.⁶

Copyright protection aims to overcome this problem. Its purpose is to ensure that the creator is adequately remunerated, so that there continues to be an incentive for creation.⁷ It does so by making copying subject to authorization. The result is an increase in the prices of information goods. This increase in cost does not result in a reduction in welfare because the increased incentives to develop new information goods generate welfare benefits that more than compensate the price effect of copyright protection.

European intellectual property law provides right holders with the exclusive right to authorise or prohibit the reproduction of their protected works.⁸ However, enforcement of the reproduction right can be difficult and costly. This is particularly the case for the reproduction of protected

⁵ Information is defined as anything that can be digitised. Shapiro, Carl and Varian, Hal R. (1999) *Information rules. A strategic guide to the network economy*. Harvard Business School Press.

⁶ Arrow, K. J. (1962) "Economic welfare and the allocation of resources for invention." In K. J. Arrow (ed.), *The Rate and Direction of Inventive Activity* (pp. 609–625). Princeton: Princeton University Press

⁷ For a revision of the economics of copyright see for example Landes, W. and Posner, R. (1989) "An economic analysis of copyright law." *Journal of Legal Studies* 18: 325–363 or Besen, S. and Raskind, L. (1991) "An introduction to the law and economics of intellectual property." *Journal of Economic Perspectives* 5: 3–27. Leabowitz, S. and Watt, R. (2006) "How To Best Ensure Remuneration For Creators In The Market For Music? Copyright And Its Alternatives." *Journal of economic surveys* Vol. 20, No 4 provides additional references on this topic.

⁸ See Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001, Article 2. op. cit..

works for private use, as monitoring the acts of private copying is impossible in many cases and very costly. This is why the EU Copyright Directive 2001/29/EC allows Member States to legislate exceptions or limitations to the reproduction right on condition that a fair compensation is paid to right holders. The aim of this remuneration is to compensate right-holders for the reproduction made of their creations and for which they are unable to obtain a licence fee.

Some consider that this compensation is unnecessary in the current digital world, where there exist anti-copying technologies, also known as digital rights management tools (DRM). These tools prevent copying or require some form of payment before a copy can be made. These technologies are successfully used for Pay-TV and Video-On-Demand services, but have been challenged for CDs.⁹ Existing DRM implementations face numerous obstacles: (a) consumer opposition, (b) fragmentation of technological solutions, (c) absence of a common standard, etc. As a result, many companies have decided to sell content products DRM-free.¹⁰

The majority of European Member States have introduced a private copying remuneration system applicable to devices and/or media that allow copying of protected works.¹¹ Examples of these devices are blank CDs and DVDs, external hard disks, memory cards or MP3-players, smartphones, multimedia hard disks, etc.

As mentioned above, the private copying remuneration is designed to compensate right holders for the missed licence fees and is related to the notion of “harm”. The economic notion of “harm” was recently clarified by the Court of Justice of the European Union (CJEU) in the Padawan case.¹² The *possibility* of causing harm, according to the CJEU, depends on the fulfilment of the factual requirement that digital equipment, devices and media have been made available to natural persons.¹³ This is a clear consequence of the presumptive character underlying the private copying exception, under which it is irrelevant whether or not the purchase of copying

⁹ See Leabowitz, S. and Watt, R. (2006), op. cit..

¹⁰ In the music business, content is nowadays offered by online platforms without DRMs. In January 2008, Sony BMG announced its intention to sell songs without copyright protection software. Sony BMG became the last of the top four music labels to drop DRM following: Warner Music Group, which in December 2007 said it would sell DRM-free songs through Amazon's digital music store; and EMI and Vivendi's Universal Music Group, which announced their plans for DRM-free download earlier in 2007. See "Sony BMG Plans to Drop DRM", 4 January 2008. See: http://www.businessweek.com/technology/content/jan2008/tc2008013_398775.htm

¹¹ See Thuiskopie, “International Survey on Private Copying Law and Practice”, 21st Revision 2010.

¹² Court of Justice of the European Union Judgment, case C-467/08, Padawan vs SGAE, Article 44, 21 October 2010 (“copying by natural persons acting in a private capacity must be regarded as an act likely to cause harm to the author of the work concerned”).

¹³ CJEU C-467/08 – Padawan SL, par 54.

equipment and media is followed by the effective production of private copies.¹⁴ This reasoning led the CJEU to the conclusion that the mere fact that equipment or devices enable the making of copies is sufficient *per se* to justify the application of the levy.¹⁵

In its report, among other things, Oxera claims that the removal of the private copying remuneration systems would create general welfare. In what follows we assess, from a purely economics-based perspective, the welfare implications of removing the private remuneration schemes currently adopted by the vast majority of EU countries and conclude that such removal, rather than creating general welfare, would be detrimental, in particular for the right holders and the consumers.

¹⁴ The Padawan decision recalled that in a former copyright case (see Case C-306/05 SGAE [2006] ECR I-11519, pars. 43 and 44) the CJEU had already held that account should be taken of the mere possibility for the consumer, in that case customers of a hotel, of watching TV broadcasts through a TV set and a signal made available to them by that establishment, and not of the effective access to those programs by the customers: see par. 58.

¹⁵ CJEU C-467/08 – Padawan SL, parr. 55-56.

Section 3

Welfare implications of removing private copying levies

In this section, we explore the welfare implications of removing private copying remuneration for right holders, device manufacturers and consumers. To simplify our analysis, as Oxera did, we focus on the impact of such a policy on the music industry.

3.1 Right holders

As we have explained in the previous section, levies are part of the remuneration of right holders for the use of their works. This remuneration is intended to provide adequate incentives to creators. Removing private copying remuneration system for acts of private copying will result in:

- An immediate revenue loss for right holders (*static effect*); and
- Reduced incentives for right holders to engage in creative activity (*dynamic effect*).

The first effect is equal to the amount received by right holders as compensation for the private copying exception. Regarding the second effect, there has been a debate about whether copyright remuneration increase right holders' incentives to produce new contents.

On the one hand, for example, Oxera claims that, "*should the levies be removed, rights holders would be expected to try to adopt alternative remuneration mechanisms*".¹⁶ However, this claim is not substantiated. Oxera does not properly identify those alternatives and it also fails to assess the revenues that could be achieved through these other remuneration mechanisms.

On the other hand, Landes and Posner (1989) conclude that copyright protection is beneficial because it addresses the appropriability problem caused by copying. Creators will only benefit from their investments if they can charge for their creations. However, when copying is

¹⁶ See Oxera (2011), page 32, op. cit..

unrestricted, consumers can access those creations at a price close to zero.¹⁷ Almost all subsequent literature that has focused on the balance between the costs and benefits of copyright protection has concluded that an “optimal” balance would imply a level of protection that is neither infinite nor zero.¹⁸ It follows that (a) copyright protection is socially desirable, and (b) removing this protection will distort incentives to create unless right holders are compensated.

The decision to create a new product is similar to any other investment decision. It depends on the initial investment cost and the expected return. The likelihood of undertaking a project is greater when the expected profitability of the project is large.¹⁹ The right holder’s incentives to engage in creative activity will therefore depend on the expected returns from distributing and selling its work. In this context, it can therefore be considered that removing private copying remuneration will have a negative impact on those expected returns and, consequently, will have a negative impact on creative activity.

Oxera rejects this line of argument. It claims that the removal of the private copying remuneration will prop up the demand for music and that such volume effect will benefit right holders. In particular, Oxera claims that (a) empirically there is a negative link between sales growth and the level of the private copying remuneration, and (b) the digital music market has gained greater importance in many of the countries where per capita revenues from private copying remuneration are low.²⁰ Oxera seeks to support the first of these claims using the chart in Figure 1 below. A similar chart was used in support of the second claim (see Annex A). Figure 1 shows the relationship between levy revenues per capita and annual growth in music sales for the period 2004 to 2008. However, Figure 1 does not show what Oxera claims it does. Firstly, the correlation between the two variables considered by Oxera, even if negative, is low and not statistically significant. Our estimates indicate that, for instance, the correlation between the annual growth in sales and the private copying remuneration per capita for the period 2004-2008 is -0.17 and is not statistically significant.²¹

¹⁷ These authors have considered in their analysis the costs associated to copyright. The social costs of restricting access to consumers (a static effect, found in each period in which protection ensues), the increased costs of second-generation creation (a dynamic effect, affecting the inter-temporal sequence of creative activity), the ‘rent seeking’ resource allocation problem, and the transaction costs of maintaining the system (mainly protection and enforcement costs).

¹⁸ See Liebowitz, S. and Watt, R. (2006) for a detailed list of references, op. cit..

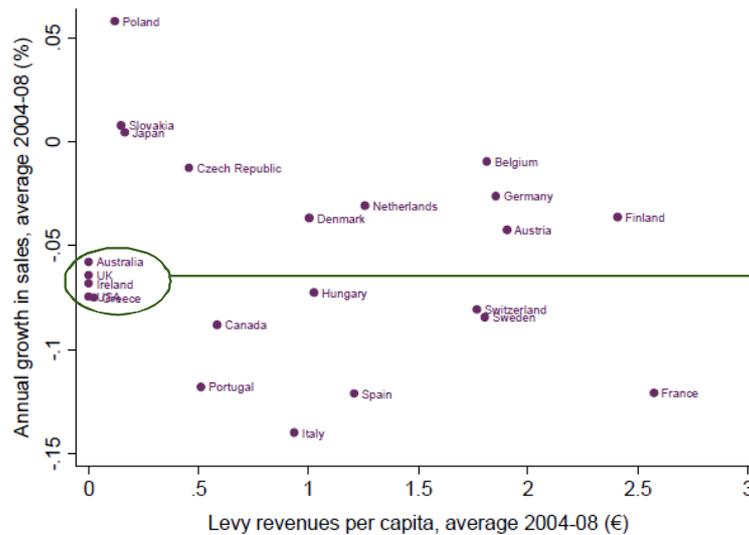
¹⁹ See A. Damodaran (1999) *Applied Corporate Finance*, John Wilry & Sons, Inc; R. Brealey and S.C. Myers (2000), *Principles of Corporate Finance* (6th ed.), McGraw-Hill.

²⁰ See Oxera (2011), pages 54 and 55, op. cit..

²¹ The correlation between the digital music sales as percentage over total sales and private copying remuneration per capita is also low and non statistically significant. As reflected in Table 1, our estimates indicate that it is -0.33.

Secondly, a large proportion of countries with private copying remuneration schemes show sales growth figures well above those countries with lower per capita private copying remuneration. For instance, 10 out of the 18 countries included in Figure 1 with positive per capita private copying remuneration exhibit sales growth figures higher than the countries with no private copying remuneration which are encircled in green.²²

Figure 1 Industry performance and importance of private copying remuneration



Note: This figure replicates Figure 4.1 in Oxera's report. See Oxera (2011), page 54, op. cit..

Thirdly, Oxera has not taken into account possible differences in the supply and demand conditions across countries. In other words, Oxera is “comparing apples with oranges”. Those differences could also explain the observed differences in industry performance. For instance, we would expect the annual growth rate in music revenues to be driven in part by economic activity. We would also expect the share of sales of digital music products to be higher in those countries with high Internet penetration, or with high Internet usage rates. Table 1 below shows the correlation between the annual growth rate in music revenues and the share of digital sales with

²² When looking at the share of digital sales we also find that some countries with private copying remuneration show a higher percentage of digital music sales than those without private copying exception. Moreover, we find that there are substantial differences in the share of digital sales across countries that do not allow for private copying. For example, Australia, Ireland and the UK show an average share of digital sales between 5% and 10% for the period 2004-2008. This rate is much lower than the one observed for the USA during the same period, which is above 25%. See Figure 2 in Annex A.

some variables that could explain the observed cross-country differences in Figure 1.²³ We find that the annual growth in music revenues is positively correlated with the growth rate of GDP per capita, and that the observed correlation is significantly higher than the one observed for the private copying remuneration per capita. In the case of the share of digital sales, as expected, we find that it is positively correlated with the degree of Internet penetration.

Table 1 Correlations

	Annual growth of revenues	Share digital sales of total sales
Levy revenue per capita	-0.1700	-0.3332
GDP (in US \$)	-0.1134	0.8907*
GDP per capita (in US \$)	-0.2581	0.3260
Fixed broadband subscribers	-0.0850	0.8944*
Internet users	-0.0372	0.8812*
Growth rate GDP	0.3945	-0.5384*
Growth rate GDP per capita (in US \$)	0.4577*	-0.5669*

Note: The asterisk indicates that the correlation is statistically significant.

Source: The private copying remuneration per capita, annual growth in sales and share of digital sales are the variables reported by Oxera in Figure 4.1 and Figure 4.3. The remaining variables included in the table have been obtained from the World Bank Statistics database.

Fourthly, when other factors influencing the sale of music, such as GDP or Internet penetration are taken into account, we find the relationship between music revenues and per capita private copying remuneration to be positive. **This means that, in sharp contrast with Oxera’s claims, we find that private copying remuneration increases revenues from music sales, which is explained because the remuneration increases the incentives to invest in music production.**

We have used cross-country data to evaluate empirically the relationship between music sales and private copying remuneration. We have taken into account several factors that may affect music sales, such as the size of the market. Our study uses information for 19 European countries for the period 2000 to 2010.²⁴

We have used data on music sales per capita provided by IFPI (International Federation of the

²³ The correlations have been computed taking into account for each country the average observed for the period 2004 to 2008. For instance, in the case of “Growth rate GDP” we have computed the annual growth rate and then the average by country for the period 2004 to 2008.

²⁴ Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, United Kingdom.

Phonographic Industry).²⁵ We have controlled for differences in the supply and demand conditions across countries by introducing the following control variables: the GDP per capita, the unemployment rate and the percentage of subscribers to fixed broadband access to Internet. In order to take into account unobserved differences we have also introduced country fixed effects.²⁶ The first two variables and the country fixed effects aim at capturing cross-country differences in supply and demand conditions. Our broadband penetration variable is meant to capture differences in the availability of digital technologies. A complete description of the model and the data used can be found in Annex B.

Table 2 below shows our regression results under different specifications. As shown in the first column, in the absence of other controls, there is no statistically significant relationship between music sales and private copying remuneration. Once we take into account the various demand and supply factors that may explain observed differences in music sales across countries, we find a positive and statistically significant relationship between music sales and private copying remuneration. This regression analysis, though simple, makes perfect economic and statistical sense. As one would expect, we find that music sales increase with income per capita and fall with unemployment and fixed broadband Internet penetration.

²⁵ IFPI provides figures on total music sales: see IFPI, *Recording Industry in Numbers 2011* (http://www.ifpi.org/content/section_resources/rin/rin.html). We have combined this information with data on population from the World Bank Statistics database in order to compute per capita figures.

²⁶ The fixed effects model is a method for controlling for omitted variables when the omitted variables vary across individuals (in our case, countries) but do not change over time. For a detailed description see Verbeek, M. (2008) *A guide to Modern Econometrics*, Wiley, third Edition; Greene, W.H. (1999) *Econometric analysis*, Prentice Hall.

Table 2 Regression results

Dependent variable: Music sales per capita	[1]	[2]
CL revenues per capita	0.4 [0.886]	1.517** [0.531]
GDP per capita		0.146 [0.152]
Unemployment		-0.441** [0.171]
Fixed Broadband Internet subscribers (%)		-0.689*** [0.137]
Constant	18.439*** [1.814]	25.078*** [3.390]
Observations	170	170
R-sq	0.001	0.735
Country FE		Yes

*Note: Robust standard errors in brackets. The asterisks indicate the statistical significance of the estimated coefficients: *** p-value<0.01, ** p-value<0.05, * p-value<0.1*

The results of this standard econometric analysis show that, contrary to Oxera's claim, music sales should be expected to fall following a reduction in the private copying remuneration. In short, Oxera's claim that right holders would be better off with the removal of private copying remuneration because such policy would increase music sales is factually incorrect.

3.2 Device manufacturers

In Europe, private copying levies are applied to devices, such as, blank CDs or DVDs, external hard disks, MP3/MP4 players or memory cards, which allow protected content to be copied for private purposes. In some countries private copying levies are also applied to memory cards included in devices, such as, mobiles phones with MP3 functionality, whose primary use may not be to copy protected content but which nonetheless can be used for that purpose.²⁷

The impact of the elimination of private copying levies on the profits of device manufacturers is twofold. On the one hand, device manufacturers' revenues will increase. The elimination of

²⁷ According to ThuisKopie (2010) this is the case in Croatia, France, Germany, Hungary, Italy, Romania and Spain. According to Harris interactive, on average, 26% of the UK population listen to music stored on their mobile, and this percentage increases to 40% for people between 25 and 34 years old and to 56% for people between 16 and 24 years old. Harris Interactive, "Fast forward, Waves 6 to 8", October 2010. In France, a recent survey on the use of memory cards shows that music represents approximately 21% of the content storage in memory cards. CSA, "Etude des pratiques de copie privée sur les supports d'enregistrement assujettis à la rémunération pour copie privée par les décisions n°11 et n° 13 votées par la Commission copie privée. Rapport d'étude N° 1101278.

private copying remuneration, whose payment is generally the manufacturers' responsibility, will reduce the marginal cost of production and possibly the final price of the device. The profits of device manufacturers will increase as a result of removing the private copying remuneration because the devices are less costly to produce and, to the extent that the decrease in costs is passed on to consumers, volumes increase. We denote this as the profit effect of the removal of the private copying remuneration.

On the other hand, device manufacturers' revenues will decrease, because, as noted above, the incentives to invest in new content will fall. We denote this as the disincentive effect of the removal of the private copying remuneration.

Contrary to Oxera's claim, the net effect of the removal of the private copying compensation is ambiguous. It will depend on the relative size of the disincentive effect and the profit effect. The size of the profit effect depends on the following factors:

- Firstly, the pass-on rate. The pass-on rate measures the extent to which a cost decrease (or increase) of say € 1 is passed on to end-consumers. For example, if € 1 cost decrease (increase) leads to a consumer price decrease (increase) of € 0.4, then the pass-on rate is 0.4 or 40%. If the pass-on rate is between 0 and 1, it is said that there is partial pass-on, while a pass-on equal to 1 is said to be a full pass-on. If the pass-on is zero or there is partial pass-on, device manufacturers' margins will increase.
- Secondly, the devices' demand elasticity. The increase in the volume of sales of devices resulting from the (partial) pass-on of the elimination of the private copying remuneration will be higher for products with a higher elasticity of demand.
- Thirdly, the size of the private copying remuneration paid. When the levy represents a small proportion of the device price, the removal of the private copying remuneration will have a small impact or virtually no impact at all on its price and, therefore, on its volume of sales.

In short, the profit effect will be larger when the private copying remuneration is large relative to the price of the device and the elasticity of the demand is relatively large. While we do not have data on the elasticity of demand (and Oxera has provided none), the relative size of the private copying remuneration is small in most cases and for most products and, hence, we expect the profit effect to be small.

While the size of the disincentive effect is hard to quantify, there are reasons to believe that it is bound to be large.

The main purpose of devices such as blank CDs or hard disks is to store digitised content. Other products, such as MP3 players or multimedia hard disks, are meant to store audio or video content that can be repeatedly played using the device. All these devices have thus benefited

from the existence of creative and cultural content. The demand for storage and player devices has substantially increased over the past years as a result of the increase in the availability of content. That is one of the key drivers explaining the explosion in sales of these devices. In this sense, based on information from the European Information Technology Observatory (EITO), the market for consumer electronics in Western Europe has shown a cumulative average annual growth rate (CAGR) of 26% between 2002 and 2006.²⁸ In the case of MP3 audio players the observed CAGR for the same period was 158%. Since the removal of private copying remuneration would result in a reduction of new available content, the sales and profits of device manufacturers will be negatively affected.

In conclusion, contrary to what Oxera claims, the net balance of the profit and disincentive effects for device manufacturers, as described above, is uncertain. The net effect of removing the remuneration for private copying may be positive for device manufacturers, as Oxera claims, but could not be very large.

3.3 Consumers

The removal of the private copying remuneration will impact consumer welfare in two ways. Consumers may benefit from a reduction in the prices of storage devices. This will happen if device manufacturers choose to pass-on the removal of the private copying remuneration onto prices.

On the other hand, consumers may be made worse off by the removal of the private copying remuneration if it leads to less or lower quality content. The net impact of private copying remuneration removal on consumers' welfare is, therefore, ambiguous.

Oxera claims the existence of an additional effect on consumer welfare: an indirect effect on the demand for music products. It claims that the removal of private copying remuneration will result in an increase of consumers' available income, that will increase the demand for music downloads and other forms of music files. This effect is bound to be trivially small. This is for two reasons.

Firstly, the impact of the removal of the private copying remuneration on disposable income will be trivial for most households. Secondly, the increase in disposable income need not lead to an increase in the demand for music. It could lead to an increase in the demand for any other product: e.g. toothpaste.

²⁸ The total figures for consumer electronics include of DVDs, personal multimedia devices (MP3), and optical disks. See ECONLAW "Economic analysis of private copy remuneration", 26th September 2007, based on EITO (2006 & 2007 Reports).

In conclusion, contrary to what Oxera claims, the total effect of removing private copying remuneration on consumer welfare is ambiguous. It will only be positive if the price effect dominates the disincentive effect, which is a priori unclear.

3.4 Total welfare effect

Table 3 below summarises the effects of removing private copying remuneration on right holders, device manufacturers and consumers. Removing private copying remuneration will lead to a decrease in right holders' income and will thus reduce their incentives to engage in creative activity. As a result, less content will be available, which will make both device manufacturers and consumers worse off. Of course, this is not the only effect on device manufacturers or consumers. Device manufacturers may benefit from the elimination of the private copying remuneration because it reduces their costs and may increase their sales. Consumers may also benefit from lower prices.

Table 3 Summary welfare effects according to Compass Lexecon

	Static	Dynamic	Balance
Right holders	(-) Direct revenue loss	(-) Diminish incentives to innovate	(-)
Device manufacturers	(+) Profit increase	(-) Profit decrease due to lower content availability	?
Consumers	(+) Price reduction *	(-) Lower content availability	?

Note: () Assuming total or partial pass-through rate from device manufacturers*

The results in Table 3 contrast with Oxera's results. Oxera concludes that the removal of private copying remuneration is welfare enhancing for all agents. The findings of this study however show that Oxera's assumptions are incorrect and that their conclusion as regards the win-win nature of a policy that eliminates private copying remuneration is flawed. Indeed, our analysis shows that once those incorrect assumptions are removed, we have that (a) right holders are clearly made worse off as a result of the elimination of the private copying remuneration, (b) the impact on consumers and device manufacturers is ambiguous due to the reduction in content availability.

Section 4

Conclusions

In this document we have considered the impact of removing private copying remuneration on right holders, device manufacturers and consumers of music, video and printed content. To simplify our analysis, we have focused on music, as Oxera did in its own report.

Oxera concludes that the removal of the private copying remuneration is a win-win situation. It will benefit right holders, device manufacturers and consumers. Oxera's results are based on the assumption that the removal of the private copying copyright remuneration will not impact right holders' revenues negatively. They assume that right holders will increase their profitability following the removal of the levies because, they argue, this policy will lead to a significant increase in the demand for content. We have shown that these assumptions are unjustified and are in contradiction to the facts of the industries and countries where private copying copyright remuneration has been imposed.

The main conclusion of our study is that, contrary to what Oxera's report claims, the removal of the private copying remuneration will not produce the alleged benefits and will not result in a win-win situation for all market participants.

We have found that the removal of the private copying remuneration would clearly make right holders worse off. This is because they would lose the revenue generated by the private copying remuneration compensating the use of their works, and would not benefit from the alleged increase in sales of recording devices resulting from the elimination of levies. The negative impact on revenue reduces the incentives to develop new, high quality content. The information available on the music industry in 19 European countries for the period 2000-2009 shows that there is a positive and statistically significant relationship between private copying levies and content creation in the music industry.

Because the removal of the private copying remuneration would lead to less available content and lower quality content, consumers would consume less content and would have less need for recordable devices. Consequently, less devices would be sold and device manufacturers' profits would decrease. Of course, the impact on consumers and device manufacturers is more complex. The removal of the private copying remuneration might reduce the costs of devices and increase manufacturers' profits.

In sum, we find that the removal of private copying remuneration will likely lead to winners and

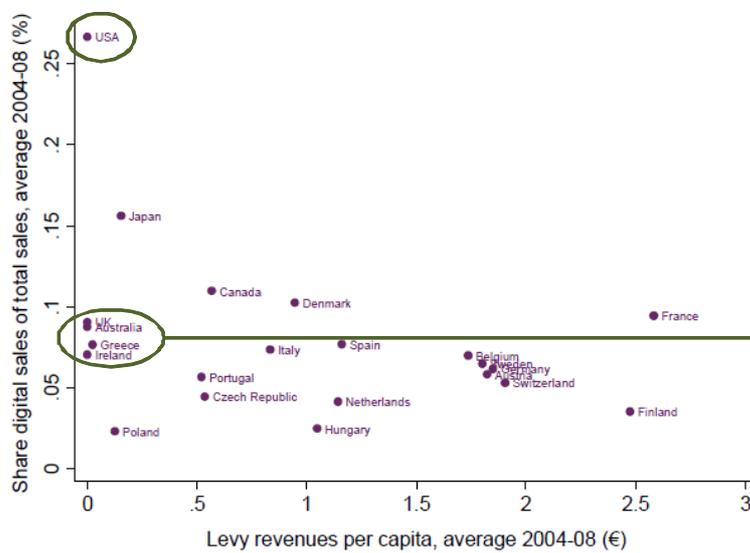
losers. Right holders will clearly lose. Device manufacturers or consumers may win in the short term but end up worse off in the long term. While the welfare effect of this policy is ambiguous at best, its impact on the incentives to develop new content is bound to be negative. Any significant change to the system which would reduce remuneration would harm right holders.

Annex A

Share of digital sales

Figure 2 shows the relationship between digital music sales as percentage of total music sales and private copying remuneration per capita.

Figure 2 Digital music and importance of copyright levies



Note: This figure replicates the Figure 4.3 in Oxera's report. See Oxera (2011), page 55, op. cit..

Annex B

Technical appendix regression results

We have estimated the relationship between private copying remuneration and content creation using information on the music industry of 19 European countries for the period 2000 to 2010.²⁹ Our analysis relies on information regarding the yearly value of music sales, the private copying remuneration collection and information on the socio-economic characteristics by country. Table 4 below summarises the data collected for the analysis.³⁰

Table 4 Data sources

Variable	Years covered	Number of countries	Source
Music sales (physical + digital)	2000-2009	19*	IFPI Recording Industry Numbers
Revenues collection for private copy	2000-2009	19**	ThuisKopie
GDP	2000-2009	19**	World Bank statistics database
Unemployment rate	2000-2009	19***	World Bank statistics database
Population	2000-2009	19***	World Bank statistics database
Fixed broadband subscribers (%)	2000-2009	19***	World Bank statistics database

Notes:(*) Information not available for Slovakia 2000-2004; (**) Information not available for Portugal and Greece 2000-2004, Czech Republic 2000-2001 and Poland 2002; (***) Information not available for Slovakia 2001.

We have estimated the following equation:

$$Music\ sales\ pc_{it} = \alpha + \beta Copyright\ Levies\ pc\ it + \delta_1 GDP\ pc_{it} + \delta_2 Unemployment_{it} + \theta Internet_{it} + \rho FE + \epsilon_{it}$$

where,

- $Music\ sales\ pc_{it}$ is the value of music sales (physical and digital) per capita in country i in year t;

²⁹ The countries included in our sample are: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, United Kingdom.

³⁰ All the monetary variables have been converted into US dollars using the exchange rate obtained from the Pacific Exchange Rate service from the University of British Columbia (<http://fx.sauder.ubc.ca/>).

- $Copyright\ Levies\ pc_{it}$ is the revenues collected from private copying per capita in country i in year t ;
- $GDP\ pc_{it}$ is the Gross Domestic Product per capita in country i in year t ;
- $Unemployment_{it}$ is the unemployment rate in country i in year t ;
- $Internet_{it}$ is the percentage of fixed broadband subscribers in country i in year t ;
- FE are fixed effects by country, and
- ε_{it} is the standard error term.

Table 5 shows some descriptive statistics for the variables include in the analysis estimated equation.

Table 5 Descriptive statistics

Variable	Number of observations	Average	Standard deviation	Minimum	Maximum
Music sales per capita (USD)	184	18.2	12.5	1.1	58.6
Revenues collection for private copy per capita (USD)	175	1.2	1.0	0	4.3
GDP per capita ('000 USD)	189	29.2	14.6	4.5	65.7
Unemployment rate (%)	189	7.6	3.7	2.1	19.9
Fixed broadband subscribers (%)	188	12.5	10.9	0	41.1