

**WHAT ARE THE CONSEQUENCES OF THE EUROPEAN UNION EXTENDING
COPYRIGHT LENGTH FOR SOUND RECORDINGS?**

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EXECUTIVE SUMMARY

This report examines the economic consequences of increasing the EU sound recording copyright from 50 to 95 years, effectively matching the length of the sound recording copyright in the US. The analysis is based upon economic methodology and relies upon current economic thinking on topics related to copyright length. This analysis also provides some new empirical data to help inform discussion of these issues. It does not, and indeed it cannot, prove whether increasing the copyright length is good or bad. Nor is the function of this report to advocate a position on this topic. We do know that copyright imposes some tradeoffs between production of new works and consumption of old works. It is possible that the optimal copyright length is infinite or that it is much shorter than infinite.

The conclusions of this report are as follows:

- I. It has sometimes been claimed that the impact of a copyright law extension is likely to have a trivial impact on production. An empirical analysis in this report, based on a unique data set, indicates that the proposed change in the sound recording copyright is likely to have considerably larger financial implications than has previously been assumed. Increasing the copyright term of sound recordings from 50 to 95 years would likely increase nominal revenues by almost 70%. Discounting these future nominal revenues, as is proper, lowers their present value to a range from 3% to 10%, depending on the discount rate chosen. The discounted value is of sufficient size to allow an economically consequential increase in the production of new works.
- II. Because the proposed extension of copyright is likely to have measurable impacts on revenues, the existence of a copyright length differential across markets will lead to production being focused more heavily on the market with the longer copyright term than would have otherwise been the case. In other words, European creators will tend to focus more on the US market if the US has a lengthier copyright life than in the EU and production might move to the US for this reason. This difference in copyright duration works to the detriment of European producers and will almost certainly lead to inefficient production because the playing field is uneven.
- III. Ownership provides valuable social function with regard to the efficient stewardship of valuable resources. This is equally true for copyright ownership. Similarly, reinvestments in copyrighted works are required from time to time. The potential benefits of both of these factors remain in effect forever and thus argue for a longer copyright term.
- IV. The onset of unauthorized copying over the last few decades reduces the ability of producers to appropriate revenues from a given amount of sound recording usage while at the same time increasing consumer usage for a given amount of consumer payment. This tilts the balance of copyright away from the production of new works, threatening to reduce production below efficient levels. Therefore, the optimal copyright length becomes longer in the fact of such activity.

V. In the vast majority of instances, copyright provides no monopoly power to the copyright owner. The type of monopoly power that can be exercised through copyright is associated with unique individual abilities. In those instances where such monopoly power exists, irrespective of the fact that economic efficiency would be improved if such monopoly power were reduced, such reduction would be at variance with the treatment of this type of monopoly power elsewhere in the economy. It is also the case, given the large fraction of new works that lose money, that a small number of winners would need to earn very high returns if the industry as a whole were to be able to generate normal competitive returns.

In summary, there are numerous economic grounds that can be adduced to support a request for extending the copyright on sound recordings. There are clear benefits that will arise from an increase in new creations and the proposed increase in copyright are large enough to lead to measurable increases in new production. While it is also true that there are increased costs, in the sense that copyright allows price to stay above the cost of reproduction, no one has measured the size of these costs to determine how large they are. Nor is there evidence that these costs lead to prices being above a competitive “zero profit” level since the costs of production need to be recouped in some manner. Even if there were some monopoly power, the removal of this inefficiency in the sound recording market would entail treating the creators of the sound recordings, whose talent would be the cause of the monopoly power, more harshly than the treatment given to the many owners of other unique assets with similar efficiency characteristics elsewhere in the economy.

I. INTRODUCTION

The current copyright length on sound recordings in the EU is fifty years. I have been asked by the IFPI to examine the likely consequences of changing this copyright length to ninety five years, which would in effect match that of the United States.

I have been involved with analyzing the economic issues surrounding copyright since 1979, when the Canadian government asked me to examine the economic issues surrounding the impacts of new technologies, such as photocopying and cable television, on the then current copyright regime. Since then I have continued to work on topics related to copyright (as well as other topics unrelated to copyright).

My approach in this report is based upon my training as an economist. As such, I cannot make claims as to whether any particular result is better than another—economics does not allow findings of good or bad—but can only lay out the consequences of particular actions. In particular, economics frequently focuses on the efficiency of particular policies, and on the changes brought about by various policies, whether in terms of overall efficiency or wealth transfers from one group to another.

It is probably worthwhile to define the term “efficiency” as used by economists since it plays an important role in any economic analysis. Economic efficiency in production means that output is produced at the lowest cost, that the output of each product occurs up to the point where producing one more unit would generate less consumer value than the cost of producing it, and that all products which have consumer values greater than the cost of production be produced. Efficiency in consumption requires that consumers achieve the greatest value from the products they purchase given the money that they have available to spend. In other words, overall efficiency implies that the total quantity and variety of production will maximize the value received by consumers given the resources available. If the economy can be thought of as producing a giant pie, economic efficiency means that the pie is made as large as possible so that consumers have more to consume no matter how the pie is sliced up.

Copyright is the tool used by society in order to achieve some degree of efficiency in the production of creative works, and the sound recording copyright is the key factor in helping to achieve efficiency in the production and consumption of sound recordings. The analysis that follows examines in some detail the likely economic consequences if the current EU sound recording copyright of fifty years were increased to ninety five years. We begin with some background history.

II. THE SOUND RECORDING MARKET

Thomas Edison invented a tinfoil recording process in 1877 which he soon improved by replacing the tinfoil with wax cylinders. To avoid Edison’s patents, Emile Berliner developed in the late 1880s a competing recording technology based on discs, which came to be known as the gramophone. A battle between the cylinder and the disc took place over several decades but discs had won the day by 1920. Edison’s company introduced its own disc, known as the ‘Diamond Disc’ with great fanfare and in a precursor to the ubiquitous “is it live or is it Memorex” commercials, embarked on demonstrations asking the public to guess whether they were hearing live performers or a disc. It is reported that millions took this test between 1915 and 1925.

At that time the recording industry was still engaged in acoustic recording. There were no microphones and no amplifiers. Singers, for example, shouted into a recording horn and the sound energy was converted into a mechanical signal on the disc. In the mid 1920s engineers at Western Electric devised a new method for performers to sing into microphones, which converted the sound into electric currents controlling an electromagnetic record cutter, producing a recording. These discs were identical in playback format to the old discs and could be played on the older equipment. Most phonographs of the time still reproduced the sound acoustically, without electrical amplifiers.

Early recordings were of low sonic quality and a single record had a very short capacity in terms of playing time. It was not until the 1950s that high quality recordings with longer playing times appeared. The original long playing record, introduced in 1948, rotated 45 times per minute and could play 12 minutes of music per side; this was soon replaced by the more standard LP record which rotated 33 times per minute and played for over 20 minutes per side.

Although improvements in the quality of master recordings preceded improvements in the home retail market by several years, the quality of the master recordings was considerably lower in these early time periods than it was to become in the 1950s and beyond.

The quality differential in sound recordings that occurred in the 1950s has implications for some of the empirical analysis below. The sound quality after that period was such that, after the introduction of stereo in the early 1960s, limitations in human hearing have made further sonic improvements very difficult. Recordings made from the late 1950s and beyond, therefore, are of higher quality than recordings before this period. That means that we would expect current sales of recordings made before the late 1950s to be less popular than recordings made after this period for the simple reason of their inferior sound quality.

This implies that information prior to the late 1950s will possibly underestimate the future sales of records that we can expect in the post stereo/LP era. As we will see below, the sales of records from the 1960s and 1970s, thirty and forty years after their introduction, continues at a somewhat higher level than was the case for recordings from the 1950s. Although this might be due to their more recent issue, some portion of this difference is probably due to the sound quality issues.

III. THE SOUND RECORDING COPYRIGHT

Copyright covers the expression of ideas (e.g., through words or music). Copyright provides the copyright owner the sole right to reproduce an artistic work (although there are defenses to infringement such as fair dealing which allow others to make reproduction under certain circumstances).

But copyright protection is very narrow—for example, if someone else should, by a remarkable coincidence, write exactly the same song or story as you, without ever coming into contact with your work, your prior copyright does not prevent him from selling his work. If I tell largely the same story as a prior author (young lovers dealing with the anguish of having families that hate each other) writing it in my own words and providing my own detail, I am free to do so. Any author can produce a product that is very similar in style and substance to a prior copyrighted work, as long as they have made their own creation and not copied someone else's work.

A copyright on a sound recording is generally even narrower. Once a song is recorded, any other performer is allowed to make a recording of the same song (usually with a compulsory payment to the creator of the song, although not to the creator of the original performance). Follow-on performers do not even need to put their own creative spin on their sound recording. If I can make a recording that sounds exactly like the Beatles rendition of forty years ago copyright would not prevent it. Sometimes these sound-alike recordings are used in movies, television programs, or advertisements since the rights to these imitation recordings are usually far less expensive.

A. *The Copyright Monopoly?*

It is sometimes said that copyright provides a monopoly to the copyright owner. Although copyright provides the copyright owner a monopoly on making copies, this does not mean that copyright provides an economically meaningful monopoly.¹

All property rights provide a monopoly of sorts. You have a monopoly on the use of your house, since by law you can prevent others from using it. For similar reasons, you have a monopoly on the use of your car. Neither of these monopolies is an economic monopoly since your car and house are (presumably) just like many others and allows you no special advantage in the marketplace.

You also have a monopoly on your effort. In general, that is not an economic monopoly either. Yet, if you could serve a tennis ball with inordinate skill you might become a top money-winner on the tennis circuit. This skill would be a form of monopoly power since only a very few can make it to the top. Similarly, if you were amazingly funny you might make a fortune as a comedian. Again, this rare talent is a form of economic monopoly. As a comedian you might not go on tour at every possible opportunity. The less frequently you go on tour, the more you might be able to charge for your appearances. This restriction of effort, if it is done to increase overall profits, might properly be called an exercise of monopoly power.

Economics textbooks often talk about how the incomes of such ‘stars’ consists of ‘economic rent’ that could be taxed with no ill effect to efficiency, although there is no real attempt in tax laws to identify and remove ‘monopoly’ earnings of these individuals as opposed to ordinary high earnings that might have no monopoly element. If, for example, a surgeon earns 200,000 euros, but in his next best career (which has no non-monetary advantages or disadvantages) he could have only earned 110,000 euros, then 90,000 euros would be known as economic rent, and it could be taxed with no ill effect since the surgeon would remain a surgeon even at a salary of 110,000 euros. If the surgeon faced a downward sloping demand for his services, he would provide too few surgeries, relative to the efficient ideal. Economic efficiency would be served if the surgeon were forced to perform more surgeries. Yet there is no free society that would attempt to bring about this extra efficiency by forcing the surgeon to work longer hours, or to remove all income that is rent. Nor is there any attempt to force leading comedians or tennis stars to perform more often, even though it might make their market closer to the competitive ‘ideal’ by reducing a monopoly restriction on production.

¹ Although copyright provides a monopoly over the particular title, there might be many close substitute titles available. Every firm has a monopoly over the products that bear its name. Kia and Mitsubishi have a monopoly over automobiles with their names, although few would argue that they have monopoly power in the automobile market. See Edmund W. Kitch (2000).

Similarly, if I create sound recordings of much higher quality than other people I might be able to earn the high income that is associated with the small number of top sound recording artists. In reality, the “monopoly” conferred by copyright is no different than the ‘monopoly’ that everyone is given over their own efforts. This putative monopoly only creates an economic monopoly for unusually talented individuals. In those few cases it provides monopoly power, but most of the time it does not. The monopoly, if there is one, is really due to the underlying talent of the artist, not to copyright per se. The copyright merely allows the creator to tap the monopoly power that is inherently there.

Government prohibitions on monopoly, through competition law, tend to focus on attempts by monopolists to artificially and unfairly restrict competition. In general, a high market share (monopoly) that is achieved entirely through the production of a superior product is admired and is not the focus of competition law. Copyright does not confer any ability to restrict the behavior of competitors. Once the Beatles recorded the Sergeant Pepper’s Album, those songs were available for anyone else to put on a record. Any real economic monopoly achieved by a copyright owner is due to the greater talent of the creator relative to competitors. Such monopolies are not the type of monopoly that modern competition policy tries to restrict.

In a perfectly efficient copyright system, which I describe below, authors would merely receive the minimum payment required to provide them sufficient incentive to produce their works. This result holds even if the payment were only ten thousand euros per year. Yet this would treat individuals who make their living creating copyrighted products differently and in an inferior manner compared to other workers, even though it would be economically efficient.²

IV. THE ECONOMIC BASIS OF COPYRIGHT

Artistic expressions and performances cannot be ‘used up.’ There is no limit to the number of copies that can be made from a master recording. Economists have a term for goods that cannot be used up—nonrivalrous goods (sometimes known as public goods)—and the production of these goods has different efficiency characteristics than is the case for more typical goods. Whereas competitive markets are normally expected to produce the theoretically ideal quantity of apples or shoes, that is not the case for non-rivalrous goods. This has important implications for understanding the difficulty in setting the optimal copyright length.

Neither competitive markets nor any other practicable mechanism exists for the ideal production of nonrivalrous goods. This point was made by Nobel Prize winner Kenneth Arrow in a classic 1962 article.³ Under fairly simple and general conditions it can be shown that less than the *ideal* quantity of nonrivalrous goods will be produced in competitive markets. Nevertheless, as Harold Demsetz properly noted in a classic 1969 critique of Arrow, *efficiency* does not require production of a theoretically *ideal* output, but instead is related to the method of producing the best *achievable* output.⁴ In other words, even if competitive markets could not produce an ideal

² By way of analogy, there is a concept known as perfect price discrimination, in which the seller charges each consumer the absolute maximum that the consumer would be willing to pay. This is considered perfectly efficient since it leads to the same output as perfect competition. Yet consumers would be indifferent between such a system and scrapping the entire market since they get no net benefit from this market. Economic efficiency, in this case, leads to a result that non-economists would almost certainly reject.

³ See Kenneth J. Arrow (1962).

⁴ See Harold Demsetz (1969).

quantity of some nonrivalrous good, they would still produce these goods efficiently if there were no feasible alternative methods of producing these goods at an output closer to the ideal level.

The difficulty in producing nonrivalrous goods ideally is due to the tradeoff between efficient production and efficient consumption. Understanding this tradeoff is essential for grasping how economists would go about measuring the ideal length of copyright, and that is the issue to which we now turn.

A. *The Consumption-Production Tradeoff*

The fact that ideas and expressions do not get used up allows for an unusual result in terms of the ‘efficient’ or ideal level of *consumption*. Since my listening to a song doesn’t reduce your ability to also listen to the same song, the efficient consumption of that song, once it has been produced, is to allow everyone who has a value of the song that is greater than the cost of transmitting or reproducing the song (often assumed to be zero) to consume the song.

This is a quite remarkable result. Typical goods, such as apples, are scarce, meaning that there are fewer apples in existence than the quantity that potential consumers would wish to eat if apples were freely available; thus, some rationing mechanism, such as price, must be used to determine who gets the apples.

The ability of one unit of a nonrivalrous good to be reproduced without limit turns usual rules of consumption efficiency on their head. Everyone, today and in every future generation to come, can listen to Beethoven’s Ode to Joy or enjoy Debussy’s Prelude to the Afternoon of a Faun. The concept of scarcity returns if we contemplate attending any given performance (where seats are not infinite), or listening to any given sound recording (which uses resources in its production), but the piece itself, the one that was in the mind of the composer, has no scarcity attributes, *once it is conceived*. Thus, efficient consumption of a nonrivalrous work, such as Beethoven’s Ninth, assuming that transmittal costs were zero, would require that everyone who placed a positive value on hearing the symphony be allowed to listen to it.

This would seem to imply that everyone who might derive value from consuming an intellectual product should be allowed to consume it, if we are interested in achieving economic efficiency. But there is a fly in this ointment, which is why the term “tradeoff” exists in this section’s heading.

The requirement that all potential consumers be allowed to consume the intellectual products puts a serious restriction on the price(s) that can be charged for the product. If consumers have differing values for the good and the producer is only able to charge one price in the market, then no matter what price the producer picks, some potential consumers will be priced out of the market—unless the producer picks a price of zero.⁵

A price of zero would lead to the efficient consumption of the product. But a price of zero would also leave the producer with no revenue. Zero revenue would obviously be an untenable position for a producer.

⁵ There is a possibility known as ‘perfect price discrimination’ whereby the producer gets to charge each consumer a price just below the price the consumer is willing to pay. This is unrealistic but is the only market mechanism that can, in theory, lead to the efficient production of nonrivalrous goods.

Economists normally assume that producers require remuneration to produce. Not only is it usual to make this assumption, but there is overwhelming evidence that this assumption is correct. Although there are a large number of amateur meteorologists, cooks, and basketball players, it seems highly unrealistic to believe that there is no need to pay individuals to perform these services at a professional level. Similarly, for the creation of artistic works, such as sound recordings, it is difficult to imagine full-time professional production without pecuniary reward.

Thus if producers of nonrivalrous goods, such as the performances found on sound recordings, were to receive no revenue, then there is little reason to believe that production will occur at a rate anywhere near the efficient, to say nothing of ideal, level. This, then, is the problem brought about if one attempts to achieve efficient consumption—there will be nothing for potential consumers to consume since a price of zero fails to provide efficient incentive to create. Failing to achieve ideal consumptive efficiency is the cost involved in providing conditions to promote reasonable quantities of artistic works of the quality demanded by consumers.

Therefore, if markets are to be used to provide producers with a pecuniary incentive to create intellectual products, creators must be given some degree of control over the use of their products, prohibiting others from copying their ideas or expressions. This is the role of copyright.

Intellectual property protection, then, can be seen to create two countervailing results. First, it provides authors of compositions and performances the wherewithal to receive remuneration for their activities, which has the beneficial impact of increasing the production of expressions and ideas. On the other hand, copyright laws allow the owners of the intellectual properties to charge positive prices for their use, restricting the usage and consumption of these ideas below their ideal levels.

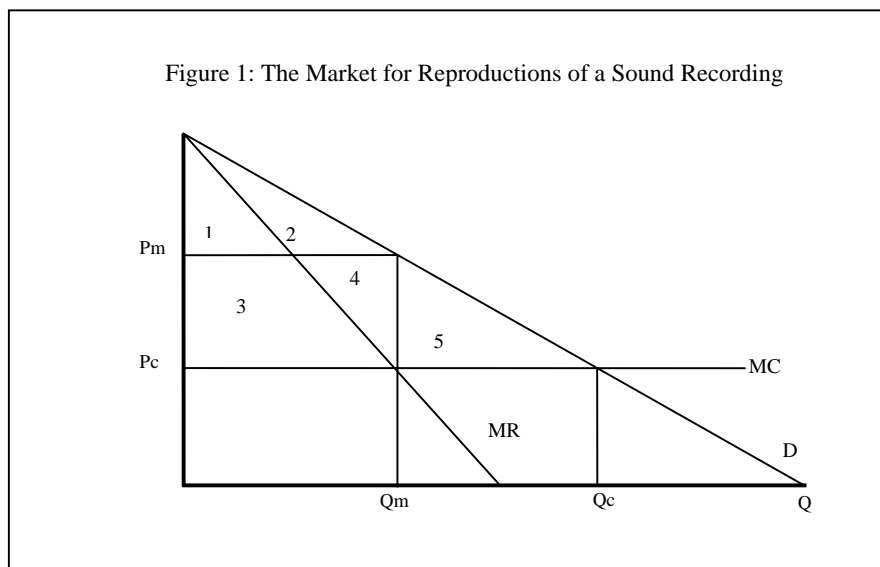


Figure 1 is the standard textbook treatment of these issues using basic supply and demand. Assume it represents the market for reproductions of a particular sound recording title for some period of time. The demand for this title lasts for multiple time periods, each identical to the first.

The perfectly competitive solution would be a price of P_c and quantity Q_c , which also yields consumption efficiency (the sum of areas 1–5). The problem is that this result yields no profit in the reproduction market with which to pay for the creation of the title which implies that no consumption at all will occur without some copyright protection.

Copyright provision results in a ‘monopoly’ output level Q_m and price P_m and most importantly revenues above the reproduction costs (areas 3 plus 4 are these net revenues) with which to pay for the creation of the sound recording. If these revenues are sufficient to cover the costs of creating the sound recording society benefits from the production of copies of this title in the amount of $1+2+3+4$ (for as long as the copyright last), less the fixed costs of creation. Area 5, the benefit to society from increasing output from Q_m to Q_c does not exist under copyright since output stops at Q_m . However, being able to imagine an improvement (area 5) is not the same as being able to bring it about, as Demsetz pointed out. Once a copyright regime is adopted as the mechanism to stimulate production of creative works, area 5 is no longer feasible during the life of the copyright. The loss of area 5 can be thought of a cost of copyright, since it is required in order to generate any titles, and thus value, at all.

Of course if the sound recording continues to sell it is likely after some point in time that more than enough revenues will be generated to cover the cost of creating the sound recording. According to economics, once a creator has received sufficient payment to generate creation, any further payment is unnecessary and even wasteful. Therefore, in any years of copyright beyond that required to cover the costs of creation, area 5 would represent an opportunity lost due to the overlong length of copyright. Of course, because of uncertainty in the music business, there are many sound recordings, probably the vast majority, which never sell enough to recoup their costs. For this reason the returns on those recordings that are successful need to return more than the bare minimum that would allow the specific successful recording to break even.

In theory it is possible that the optimal length of copyright could be anything. The factors that influence this length are discussed next.

V. THE GAINS AND LOSSES FROM EXTENDING COPYRIGHT FOR SOUND RECORDINGS

The optimal length for copyright is not something that anyone can define with certainty. To make a full determination of the costs and benefits of copyright extension, economists need to know more about these markets than they currently do; the information requirements are severe. The data that are required for such an examination would include (1) the increase in revenue that extending copyright would provide to creators; (2) the number and value of new works created as a result of this additional revenue due to extending the copyright duration (i.e., the elasticity of supply of creative works; (3) the reduction of surplus for reproductions of copyrighted materials under extended copyright, relative to the surplus that would be generated if copyright protection were less lengthy (i.e., the increased unnecessary deadweight losses).

It has often been presumed that current copyright duration goes so far into the future that any changes at the margin are unlikely to have any noticeable impacts. The reason for this belief has to do with the concept of present value whereby payments that occur far in the future have less value today.

A. Present Values

The issue of copyright extension necessarily requires an examination of revenues that would occur far in the future. Economists have a method for valuing future payments that is based on a fairly simple understanding of interest rates (sometimes called discount rates). It is necessary to review this topic briefly to assure that the material below is fully understood.

Present value is merely the value today of a payment or stream of payments occurring some time in the future. This value is dependent on interest rates. For example, even if there is no inflation, a future payment of 1.05 Euro one year from now would be worth somewhat less than 1.05 Euros now because anyone can put 1.05 Euro in the bank and earn some interest in the course of a year. If the interest that can be earned is 5% then the present value of 1.05 Euro paid in a year would be 1 Euro since if you were to invest 1 euro in a bank account now you would have 1.05 in a year. Essentially, the present value of a future payment is the amount one would need to invest now to have an amount equal to the amount of the future payment when that future payment is made. Obviously, the higher the interest rate the lower the present value of a future payment.

When we discuss the revenues generated by copyright extension in the sound recording market, which we do in Section VI it will be necessary to couch the language in terms of present values.

B. Payment versus creation

Small increases in payment need not have equally small impacts on the creation of additional works. There is a possibility that a seemingly small increase in present value could make an important difference in creative output, perhaps because the additional revenue allows certain potential recording artists reach a point where they switch to full-time creation. This is discussed in greater detail in Liebowitz and Margolis (2005).

The idea has to do with the concept of elasticity. A market is considered elastic if a small change in price leads to a relatively large change in output. Either consumers or producers might be very responsive to relatively small price changes. The elasticity of interest here has to do with the responsiveness of sound recording producers to changes in revenues (prices). Sometimes a 5% change in price, for example, might lead to a 20% change in quantity, leading to an elasticity of 4. We shall see below that increasing the copyright length for sound recordings appears likely to lead to an increase in revenues of between 5% and 6%. How large an increase in production of sound recordings would follow from this increase in revenues would be an important datum to know if we wished to gauge the overall efficiency of such a change.

There has been surprisingly little serious empirical examination of these issues. Recently there has been some academic work trying to determine whether changes in copyright length have an impact on creation. A forthcoming paper by Baker and Cunningham (2006) demonstrates that when copyright laws are strengthened the market capitalization of firms in copyright industries increases. A paper by Png and Wang (2005) finds that extensions of copyright in various countries, including many in the EU, led to surprisingly large and significant increases in the number of copyrighted works with an implied elasticity of greater than one. Thus the small amount of empirical work, although not specifically related to sound recordings, indicates that there is reason to believe that producers do react to changes in copyright law.

One factor that would help determine the elasticity of supply would be the number of part-time creators who would move full-time into the market with only a small increase in revenues. Realistically, the constraint for sound recordings doesn't come from the musicians, of whom there are many willing to jump into full-time creation for a song, so to speak, but from the sound recording companies who must use scarce resources to sign and produce new groups. If they used a large portion of their increased revenues to find and produce sound recordings from new groups it is conceivable that the resulting increase in new sound recordings would be larger than the percentage increase in revenues. Of course, this is only a possibility for which there is no direct empirical data.

It is also possible, even without very elastic supply conditions, that the optimal copyright length might be infinite. Sufficient conditions for such a length are not difficult to imagine and are put forward in detail in Liebowitz and Margolis (2005). Whether those conditions hold, however, is unknown.

C. The Impact of Unauthorized Copying on Optimal Copyright Length

When sound recordings first became popular, private copying was not possible. In the 1970s cassette recorders made it fairly easy to engage in duplication of prerecorded music. Digitization and the Internet have conspired to further increase the unauthorized duplication of prerecorded music, through file-sharing, in a manner which has diminished the revenues of the sound recording industry while at the same time increasing consumption of the content of sound recordings.⁶ Although we cannot know the future, after thirty years of dealing with different varieties of copying technologies, it seems unlikely that unauthorized copying will disappear.

Since unauthorized copying generally has a negative impact on sales, the impact of it on optimal copyright length is fairly easy to establish. Copying allows individual to consume the contents of sound recordings without having to purchase sound recordings. This means that the underconsumption problem, which was area 5 in Figure 1 above, is smaller than it otherwise would have been. It also means that areas 3 and 4, the revenues available to pay for new titles, is also smaller than it would have been without such copying.

Even if the duration of the sound recording copyright had been the correct number of years prior to copying—i.e., if it had perfectly balanced the value of additional new titles and unnecessary copyright monopoly before unauthorized copying—it would now be too short in length. That is because consumption has increased while the rewards to the production of new titles have fallen. In order to bring the balance back to the original equilibrium, the sound recording copyright would need to be lengthened.

VI. THE IMPORTANCE OF SALES DECADES AFTER CREATION

As we have seen, in traditional economic analysis the benefits of copyright extension are to be found in the increased production of copyrighted works. Thus, one of the most important questions in any determination of the impact of copyright extension is the impact of the extension on creative efforts. In order for copyright extension to have an impact on production

⁶ There are numerous studies that have been conducted examining the impact of file-sharing. Zentner (2005, 2006), and Peitz and Waelbroeck (2004) each examine the European Market and conclude that file-sharing has a large negative impact on sales. Large negative impacts in the US are found by Liebowitz (2003, 2006), Blackburn (2004), Rob and Waldfogel (2006) and several others. I am only aware of one study that finds no impact.

there must be a nontrivial impact on revenues, since production is based upon revenues, or the hope of revenues.

In the following analysis I examine the likely impact of a copyright extension on the revenues of sound recordings. In order to accomplish this task it is necessary to determine how large the sales of recordings are (and by extension, will be in the future) that are many decades old. There are very few examinations of the sales of old works and I am not aware of any examinations of sound recordings.

There are two elements involved with a determination of the financial importance of sales many decades after creation. First we need to determine the likely stream of copyright payments that occurs in the future. This requires empirical evidence on record sales that might be used to make prognostications about the future. Second, we need to control for the fact that later sales which occur far in the future need to be discounted to account for the time value of money. We can determine the discounted value using the well established concept of “present value”.

These issues are covered, in reverse order, below.

A. Present Values of Future Payments

It has sometimes been claimed that the benefits from a copyright extensions occur so far in the future that it can not help but to have a *de minimis* impact on creators. Indeed, this very argument was made in a brief submitted by 17 prominent economists in the Eldred case that was argued in the United States, where the economists suggested that an extension of copyright in the US made little economic sense.⁷ These economists, however, were arguing against an extension from a term of 50 years plus life to a term of 70 years plus life, which they assumed to be the equivalent of going from 80 years to 100 years.

Sound recordings have a shorter copyright duration than that analyzed by the 17 economists and because of this shorter life the present value of future payments from the extension are considerably larger than would be the case for more typical copyrighted works. In present value terms, extending copyright from 50 years to 95 years, because it begins in year 50 versus the assumed year 80, has a considerably larger impact on the present value of revenues than extending it from 80 to 100 years, as seen in Table 1.

Table 1 provides the amount (in present value terms) of additional revenue generated by forty five additional year of protection as a share of the revenues generated in years 1 through 50 (as proposed for the sound recording copyright) or an additional 20 years as a share of the revenue generated in the years 1 through 80 (assumed by the 17 economists for an extension from 50 to 70 years *after the death* of the author) under the assumption that sales are constant in each year. The impact of discounting future years is evident in that the value of those extra years is considerably below their share of years (i.e., forty five years is 90% of 50 years but the present values of the additional years are far less than 90% of the present value of the original 50 years.

⁷ See the Brief of George Akerlof et al., (2002).

Table 1: Relative Present Values of Copyright Extension from 50 to 95 or 80 to 100 Years					
Change in Term \ Discount Rate	3%	4%	5%	6%	7%
Extra 45 Years as a Percentage of original 50	21.74%	13.57%	8.49%	5.32%	3.35%
Extra 20 Years as a Percentage of original 80	4.63%	2.47%	1.28%	0.66%	0.33%
Impact of Sound Recording Extension Relative to More Typical Extension Examined by 17 Economists	4.70	5.51	6.62	8.11	10.07
Extra 20 Years as a Percentage of original 50	13.19%	8.90%	5.95%	3.95%	2.61%

Table 1 demonstrates that, with an interest rate of 3%, the value of revenue generated in years 51-95 is 21.74% of the revenue generated in years 1-50. Similarly, the present value of years 81-100 is only 4.63% of the present value generated in the first eighty years. As the interest rate increases, the relative value of the later years falls, as one would expect, since higher interest rates reduce the present value of far off future years relative to close in future years.

The point of this analysis is that the relative value of the present value of Euros earned in the proposed sound recording extension is considerably greater than that that earned during the extension which was analyzed by the 17 economists. The third row provides the ratio of relative increases in income between the two scenarios, with a value of 1 indicating that the two scenarios are equal. The numbers in this row indicated that at low interest rates the sound recording extension is about a five times as large as the copyright extension examined by the 17 economists and at higher interest rates that ratio approaches ten to one.

Note that the greater value from the extension for sound recordings is not due to the extra 25 years in the term (a 45 year extension relative to a 20 year extension). The final row of Table 1 illustrates the increase in present value for a 20 year increase in the copyright term of sound recordings and it also is considerably larger than the 20 year extension that begins in year 80.

The reader will note that Table 1 provides a range of interest rates running from 3% to 7%. The results differ considerably as the interest rate changes, so the choice of interest rate is obviously important. The 17 economists used a rate of 7%.

These rates are what are called “real” rates, which means that they are net of inflation. This means that if inflation were running at 3% per year, the 7% real rate used by the 17 economists would translate into a 10% rate, what is referred to as the ‘nominal’ rate, meaning that it is the rate that actually exists in a market without adjusting for inflation. For many individuals, 10% would seem like a high rate of return in an environment where inflation is running at 3% a year. The reader would be forgiven for asking “Is there a clearly ‘correct’ interest rate to use”?

The answer, unfortunately, is “no”. The correct interest rate depends on the riskiness of the investment and the typical returns that are being earned. The 17 economists suggested that the revenue stream from a creative work has “a high degree of uncertainty” thus requiring a higher interest rate as compensation for the higher risk. In their words:

The second assumption is the choice of an interest rate. In general, much as investors require higher compensation for riskier investments, a higher interest rate is appropriate for the purpose of evaluating highly uncertain revenue streams. Seven percent is meant to be illustrative, but it is a realistic estimate, perhaps even conservative, given the high degree of uncertainty about the revenues resulting from the production of a creative work. (page 7)

They are certainly correct that risky items require higher rewards to compensate for the risk. They are most likely correct that for an individual creator the future stream of revenues is highly unpredictable. But sound recordings are quite different than many other copyrighted works. Sound recordings are produced by companies that have large portfolios of sound recordings. Just as diversification among holdings of individual stocks greatly reduces investment risk to investors in the stock market, so too does diversification in a portfolio of sound recordings reduce the risk to the record companies. Although there may be a great deal of uncertainty about the revenues from a single work or for a single artist, the revenues from a large portfolio are far more predictable. Further, the 17 economists were evaluating payments that occurred up to 50 years after the death of the creator. Some creators are likely to discount very highly payments that occurred after they died because they might not have families or other strong bequest motivations. But corporations do not die and should not be expected to discount future payments to anywhere near the same extent as individuals with weak bequest motivations.

For both of these reasons—lower risk and no after death bequest difficulties—the choice of a lower interest than that used by the 17 economists seems reasonable and correct. How much lower is a difficult question to answer. The social discount rate for the EU when it calculates costs and benefits from public projects appears to be a real rate of 5%.⁸ This will be the number adopted in this analysis.

Using a 5% discount rate, we can see from Table 1 that an extra 45 years added to the current 50 would be expected to raise the present value of revenues by 8.49%. This assumes that there is a constant stream of revenues over the life of the sound recording. In the next two sections we examine the realism of this assumption.

B. The Pattern of Sound Recording Sales

The lower future value of a Euro is one component in any determination of the value of future copyright payments. The second is the size of these revenues over time. It is well understood that sound recordings do not generate a constant and continuous revenue stream. Instead sound recordings are thought to normally have high initial sales followed by declines. Exactly how severe these declines are has been a topic upon which there has been speculation but little empirical examination.⁹

Data provided by the BPI for this project allow one of the first examinations of the pattern of sound recording sales. The BPI data actually provide information on the number of old recordings sold in 2004, which is not identical to following the history of sales of a cohort of recordings over time. However, it is possible to use the BPI data to provide an estimate of the pattern of record sales over time.

It is an informative exercise to first examine how the pattern of sales will work out over time. Table 2 begins with a very simple example. Assume that the recording industry begins

⁸ See “Guide to cost-benefit analysis of investment projects” (Structural Fund-ERDF, Cohesion Fund and ISPA). Office for Official Publications of the European Communities, Luxembourg. This guide points out that there is wide variability in the choice of discount rates.

⁹ The presumed decline in sales over time was supposedly supported by the small share (~15%) of books that had their copyright extended back when the US law allowed two consecutive 28 year terms. Only a small number of these renewed works (~10% for books and music) were still available in 1998. See Rappaport (1998). Liebowitz and Margolis (2005), on the other hand, pointed out that a large number of best sellers remained in print 50 years after publications.

anew in 2020. Assume that new sound recordings sell 100 units per year and continue to sell that many units in each later year. Assume as well that there are 100 new recordings every year. If that were the case each decade there would be 1000 songs created that decade as well as 1000 created in each succeeding decade. Each decade's songs would have an equal market share with every other decade's songs. Table 2 illustrates these calculations.

Sales of Records in:	Sales from Recordings Created in 2020-2029	Sales from Recordings Created in 2030-2039	Sales from Recordings Created in 2040-2049	Sales from Recordings Created in 2050-2059	Sales from Recordings Created in 2060-2069	Sales Each Decade	Each Decade's Share of Sales in 2069
2020-2029	1000					1000	20%
2030-2039	1000	1000				2000	20%
2040-2049	1000	1000	1000			3000	20%
2050-2059	1000	1000	1000	1000		4000	20%
2060-2069	1000	1000	1000	1000	1000	5000	20%

A more realistic example would have the sales of new recordings increase every decade as population and income increase. The numbers in Table 3 are adjusted in this way to increase realism somewhat. In Table 3 it is assumed that the size of the new recording market grows at 40% per decade (for example, new sales jump from 1000 in the first decade to 1400 in the second). To further add to the realism of the example, we assume that the quantity of sales of any cohort of songs decline over time. In Table 3, old recordings are assumed to have sales decline by half after the first decade, but then remain constant (for example, sales of the first cohort drop from 1000 in the first decade to 500 in later decades).

Sales of Records in:	Sales from Recordings Created in 2020-2029	Sales from Recordings Created in 2030-2039	Sales from Recordings Created in 2040-2049	Sales from Recordings Created in 2050-2059	Sales from Recordings Created in 2060-2069	sales each decade	Each Decade's Share of Sales in 2069
2020-2029	1000					1000	6.8%
2030-2039	500	1400				1900	9.5%
2040-2049	500	700	1960			3160	13.3%
2050-2059	500	700	980	2744		4924	18.6%
2060-2069	500	700	980	1372	3841.6	7393.6	52.0%

Table 3 illustrates what happens in the market with these more realistic attributes. With these two new assumptions we can see in the last column the share of any cohort in the sales that occur during the last decade. One interesting result is that even though sales of recordings made in 2020-2029 have only dropped by half (from 1000 to 500 per decade) in the fifty intervening years after the recordings were made, sales of recordings from 2020-2029 only represent 6.8% of all sales occurring during 2069 (the fifth decade).

The points from Table 3 that the reader should understand are twofold. First, it is important to note that market shares in later decades might be small even when sales have continued at a relatively robust level (in this case, only declining by half during the fifty years). Second, the data we are going to observe below is similar to the data found in the rightmost column in the above table. Having seen the process that leads to the table above, we will essentially run it in reverse with the data at hand to infer how the sales of records for a given decade have changed over time. In other words, we will try to derive the original sales from the results found in the last column and a knowledge of historical growth rates. We now turn to that analysis.

C. Using Current Data to Infer the Past and Future

To determine the possible increase in revenues due to copyright lengthening we would want to know the pattern of sales of a fixed cohort of records over time and then calculate the present value of revenues in years 50 through 95 relative to the present value generated over the current fifty year copyright duration.

Obviously, we do not know how records that would have their copyright extended from fifty to ninety five years will be selling fifty years from now. It is possible, however, to measure how records that currently are or soon will be fifty years old are currently selling. We can then use the information about historical sales in the entire market to infer the pattern of sales over time.

The BPI have generated a data set based upon the top 10,000 UK albums in 2004, segregated by the year the sound recording was created.¹⁰ The results are shown in Table 4.

These data show that old recordings have a much smaller share of the market than more recent recordings. Nevertheless, as we saw in Table 3, even if sales remained relatively large relative to the original sales of old sound recordings, market growth could reduce the share of sales of old recordings to make them appear very small. It is important to control for the growth rate of the market before we can determine how the sales of old records have persevered or deteriorated.

	Total Sales	% Of Sales
1940s & earlier	413,000	0.30%
1950s	1,853,000	1.30%
1960s	6,982,000	4.80%
1970s	13,839,000	9.50%
1980s	16,022,000	11.00%
1990s	17,941,000	12.30%
2000s	88,904,000	60.90%

Fortunately we have data on the historical sales of recordings in the UK (beginning with 1964) that allow us to determine the impact of market growth upon the current shares of old sound recordings. Table 5 presents this information. The right hand column presents the ratio of current sales (period 2000-2003) relative to previous periods. As one would expect, current sales

¹⁰ The top 10,000 albums represent 91% of total sales.

are progressively larger relative to sales in previous decades. For example, current sales are more than six times as large as sales during the latter part of the 1960s.

decade	sales (millions of units)	current relative to past
50s		
64-69	37.117	6.24
70s	95.981	2.41
80s	124.567	1.86
90s	183.629	1.26
2000-2003	231.603	1.00

It is almost certainly the case that sales in the latter part of the 1960s (post Beatles, Stones, and so forth) were greater than in the earlier part, so that if we had the data on the early half of the decade the number in the rightmost column would be greater than the 6.24 value listed. Also left out of the table are sales numbers for the 1950s, which are also almost certainly smaller than the value for the 1960s. In the United States, a market for which I have data, inflation adjusted sound recording revenues were 2.5 times as high in the 1960s as in the 1950s and the average real revenues from 1964-69 were 1.5 times as high as in the period 1960-63. If the UK had experienced similar growth as the US, and if unit sales changed in line with revenues, the ratio for entire decade of the 1960s would have been 7.23 instead of 6.24 and the ratio for the 1950s would have been 17.4. Instead of using these numbers I will be conservative and use the 6.24 value found in Table 5 for the 1960s and will chose the number 10 (instead of 17.4) for the 1950s in the analysis below.

Decade	Total Sales 2004	% Of Sales	Current Market Size relative to Original Size	2004 Sales relative to Inferred Original Sales
1950s	1,853,000	1.30%	10.00	13.0%
1960s	6,982,000	4.80%	6.24	30.0%
1970s	13,839,000	9.50%	2.41	22.9%
1980s	16,022,000	11.00%	1.86	20.5%
1990s	17,941,000	12.30%	1.26	15.5%
2000s	88,904,000	60.90%		

Using this historical data we can infer the size of current sales of old recordings as a percentage of their original sales. These calculations are performed in Table 6. The fourth column, labeled “Current Market Size relative to Original Size” is taken from the rightmost column of Table 5 and represents the fact that the sound recording market was much smaller many decades ago and provides the size of the current market relative to the market in that decade. The number 10, in the first row, means that sound recording (unit) sales are ten times as great now as they were in the 1950s, which we believe to be an underestimate, explained above. The second column labeled “Total Sales 2004” reports the sales in 2004 that are derived from sound recordings that were first copyrighted in the 1950s, 1960s, 1970s and so forth and which appeared in Table 4

above. The third column reports the share of all 2004 sales due to sound recordings from each decade.

The key results are found in the fifth column labeled “2004 Sales Relative to Inferred Original Sales”. The numbers in this column are derived from multiplying the third and fourth columns. These key numbers represent the 2004 sales of an average sound recording from the prior decades relative to the sales in a typical year from the decade in which the sound recording first appeared. In other words, a sound recording first created in the 1950s generates sales in 2004 that are 13% of the sales that existed in an average year from the decade of the 1950s. Similarly, the 2004 sales of recording from the 1960s represent 30% of the sales that occurred in a typical year in the 1960s. Based on the numbers in Table 6, it appears that sales of sound recordings have an initial burst in the few years around their introduction and then decline from that level, but that in later decades sales continue at essentially a constant level. The relatively high level of sales many decades after the original recording might be considered something of a surprise.

This means that the assumptions used to calculate the present values in Table 1 (that sales were constant throughout the life of the sound recordings), although in need of some modification, are not terribly far from reality. If we assume that the higher value for the 1960s found in Table 6 is due to unique factors about music quality in that decade, and that the low values in the 1950s are due either to the conservative choice of estimated original size, or to the lower sound quality available in those recordings, Table 6 could be summarized as implying that after the first five years of sales (2004 is the fifth year in the decade starting with 2000), sales drop to approximately 22.5% of their initial level and continue at that rate. That is the assumption I am going to make in the next set of calculations, which provides the key results from this section.

	no discounting	3%	4%	5%	6%
Present Value of 100€for 5 years and 25€for 45 years	1625.00	986.72	870.94	781.11	709.97
Present Value of 100€for 5 years and 25€for 90 years	2750.00	1126.54	943.83	819.86	730.95
% Increase in Revenue due to Extending Copyright Length	69.23%	14.17%	8.37%	4.96%	2.95%

Table 7 provides the details of calculations to determine the present value of revenues that would be generated by extending copyright. The calculations are performed at different discount rates that are found in the different columns. We arbitrarily take sales to be equal to 100 per year during the initial five years of the life of the sound recording. Then, in keeping with the results from Table 6, we assume that sales drop to 22.5% of this level in each year of later decades, which would be 22.5 units per year.

The first row calculates the present value of a stream of payments that is supposed to represent the current copyright regime—50 years—with 5 years of high sales (100€) followed by 45 years of constant but lower sales (22.5€). The second row performs the same type of calculation, but for a 95 year copyright instead of a 50 year term. The third row gives the

percentage increase in revenues due to the increase in copyright term from 50 to 95. The different columns provide present value analyses with different discount rates.¹¹

What is the end result of the analysis found in Table 7? First, contrary to the beliefs of many, the revenue generated by sales between years 50 and 95 is a very substantial fraction of the revenue that would be generated in years 1 through 50, somewhat more than two thirds of the revenue under the current copyright law. This is shown in the third row of the “no discounting” column.¹² Of course, since future payments are worth less than current payments it is appropriate to use positive discount rates. The next four columns provide these calculations for positive discount rates. The impact of discounting in lowering the revenue gains is apparent as you read from left to right. Nevertheless, the change in additional revenues, accruing from extending the copyright on sound recordings, are in excess of ten percent under some interest rates, and even under higher discount rate scenarios are all considerably larger than the vanishingly small numbers that have been suggested (by the 17 economists, among others) at other times for other changes in copyright.

What this means is that the change in copyright creates a large enough change in revenues to have an impact on the behaviour of copyright owners. For example, the percentage increase in revenues is 4.67% at a discount rate of 5%. Although five percent (4.67% rounded up) may not seem like a large number, most individuals would much prefer to get a raise in their yearly income of that level rather than a raise of zero. Most companies would be thrilled at the possibility of generating an additional 5% of revenues without having to increase their costs. Potential sound recordings that were just below the margin now become worthwhile. Competition forces production to increase.

It is also true that if the present value of additional revenues is substantial, then it is also possible that the present value of monopoly losses, to the extent that they actually represent monopoly power, may also be substantial. Unfortunately there is no published research of which I am aware work attempting to measure the size of such losses.

It is also important to keep in mind that the benefits to consumers from copyright extension begin to occur almost immediately. Although the benefits to copyright owners occur will into the future, which is why we need to perform present value calculations, producers can be expected to change their behavior in anticipation of the future revenues. The producers of sound recordings, being profit maximizing firms, can be expected to anticipate future revenue increases and to immediately go ahead with some projects that would not have been considered sufficiently profitable under the old copyright regime. Thus consumers very quickly begin to benefit from these additional works brought forth by copyright extension although society does not suffer any possible related deadweight losses from these new works until many years in the future.

¹¹ Much of this gain from an extra 45 years comes from the early years, due to present value discounting. For example, using a 5% interest rate, more than 70% of the gain is derived from the first 20 additional years.

¹² These results are all conducted as if there were no inflation. Because there has been inflation and likely will continue to be inflation, the actual nominal Euros in later years will be considerably greater than the figures used in this analysis, but the actual value of those Euros will not be any higher. It should also be noted that inflation will increase the interest rate, and the discounts rates used in this analysis are assumed to exist in a zero inflation environment.

VII. THE IMPACT ON DOMESTIC PRODUCTION WHEN INTERNATIONAL TERMS DIFFER

The previous section demonstrated that changing the sound recording copyright duration from 50 to 95 years would have a material impact on copyright owners, in present value terms. We now turn to a related question. If the sound recording copyright were to remain at its current 50 year level in the EU then the copyright term in the leading competing market, the United States, will be forty five years longer. Although it is to be noted that European sound recordings sold in the United States receive the same protection in the United States as sound recordings made in the United States, the differential between the two areas is still likely to have an impact on behavior of European creators.

There are differences between the two markets in terms of tastes, and of course, language. Some performers can easily appeal to both markets, but in many instances the transition is not so simple. In the most fundamental way, language matters. Sound recordings will almost never sell nationally in the United States if they are not recorded in English (although there is a growing 'Latin' market, it is only about 4% of the total market). Just as sound recordings tend to be aimed at particular audiences in terms of genre (a sound recording combining, say, rap, classical, jazz, and rock would be highly unusual) they can also be aimed at one geographical market or another.

In the continuum of sound recordings, ranging from those squarely aimed at the EU, or those squarely aimed at the United States, there are likely to be some, perhaps a large number, that could easily be aimed at one market or the other or somewhere in the middle. If the payments become higher in the United States than in the EU, at a most fundamental level, economic analysis would predict that this change will lead to more sound recordings being aimed at the United States and fewer at the EU. That might mean that a European group records in the United States instead of the EU, or tours more in the United States, or perhaps it just means getting an American producer to make the sound fit more closely to American tastes. Regardless of the form it takes, the direction is clear: it would be worthwhile for a producer to trade-off a decrease in EU sales for an equal increase American sales because the American revenue stream will last for a longer period of time, providing material long term payoffs.

This is not true just for recording artists, but equally well for recording companies. Just as movie producers analyze potential revenue throughout the world when determining whether a picture should be made, EU record companies will be cognizant of the ramifications of international sales. If the US copyright has a longer term than the EU copyright there should be a shift of focus with the intent of appealing more to the American market and less to the European market than would otherwise be the case.

Of course, economics is indifferent to whether sound recordings are all aimed at the US market or whether they are aimed at the EU market as long as the results flowed from unhindered market decisions. Nevertheless, regulators in many countries have historically had an interest in cultural markets even when there were no efficiency consequences. But in this instance markets are not unhindered and producers are not operating on a level playing field.

When production is tilted toward one market due to artificial regulations (whether subsidies or copyright differences), economics is no longer indifferent. Economic efficiency requires that consumers be allowed to chose the products they wish and that producers compete on a level playing field so that the most efficient producers drive out the least efficient producers. Markets are usually thought to be the best arbiters of efficiency, but they will not work properly in the

face of uneven regulations that benefit one set of producers over another. Although we cannot state with certainty whether the American or European copyright length on sound recordings is more efficient, we can state that differences between the two will lead to inefficiency.

VIII. THE EFFICIENCY OF OWNERSHIP

Unlike the prior economic arguments, the ownership benefit of copyright always supports a longer copyright length since ownership benefits are maximized when property rights are maximized. We turn to that issue now.

A. *The Benefits of Stewardship*

The issue is management of existing creative works. There are several reasons why society might benefit from the management of creative works independent of any impact on creation of those works. These ideas have been propounded in Landes and Posner (2003) and Liebowitz and Margolis (2005).

It might be useful to start with an example. Many consumers derive less utility if their home (or clothes) looks very similar to all of their neighbors. If the market could not find some way to take account of these preferences for variety or uniqueness, consumers would be worse off. The decisions of individual consumers might lead to a lack of variety, since individual homeowners are likely to hope that others choose the less preferred design while they choose the preferred design. When everyone acts this way everyone is less happy because there is too little variety. The problem arises because the harm to others from one additional use of a design does not directly enter that individual's calculations, which is an example of what economists call a negative network externality.¹³

Yet market mechanisms often are able to take care of these types of problems. Home builders usually vary designs and often enter into contracts obligating them to do so. The production of different styles increases the cost relative to building the same design over and over again, but the total value of a development must increase by more than these additional costs, or builders would discontinue the practice. This is but one example where ownership, in this case ownership over the housing development, leads to a superior result than having a competitive free-for-all among homeowners.

This is an example of a larger problem whereby the lack of ownership causes severe problems, such as overfishing or overhunting of unowned animals. Cows are not on the verge of extinction because they are owned; whales, which are also very valuable, are on the verge of extinction because they cannot be owned. Almost any microeconomics textbook will make reference to this potential problem where competition will not lead to ideal results, generally known as the "tragedy of the commons."

There are then two questions that apply to sound recordings. First, are there potential problems in the use of sound recordings if ownership were to disappear, as would happen if copyright expired on works about to enter the public domain? Second, how important are such problems?

13. See Stan J. Liebowitz and Stephen E. Margolis (1998).

Clearly, in answer to the first question, there are some potential problems that would be solved by ownership.

First we have the potential problem of low quality recordings flooding the market. When recordings by the Beatles, for example, can be sold by anyone, then someone might decide to sell them using the lowest quality discs and reproduction facilities. Fly-by-night operations would have more success in this industry because consumers, being used to CDs of major artists being produced by major studios, will not be on the lookout for low quality CDs.

Second, there is the possibility of overuse, rather like the housing example above. Sound recordings are used in movies, commercials and television programs in addition to the sound recording market. Songs can lose their appeal to consumers if they start to hear it in every advertisement and television program.

Third, there can be offensive or malicious uses of these works. Political parties can start using songs as themes that has the effect of alienating music listeners who do not like that political party, possibly lowering the value of the sound recording to society. Racists and demagogues, for example, can use these songs at their rallies.

The manner in which these new uses of a sound recording are put depends on whether the sound recording is owned or not. If the sound recording is owned, the owner will restrict uses to those which enhance the long term value of the work. Without copyright there are the possibilities of overuse, misuse, and consumer deception.

This is not to say that copyright is the only solution to these problems. It is true that while ownership will solve the consumer deception problem, there are other possible solutions. One solution would be for consumers to pay attention to the label and for labels, particularly those that might specialize in works that had fallen out of copyright, to work on promoting their brand names. There are, of course, costs in these latter solutions and those costs would need to be contrasted with the costs involved in allowing copyright to continue for those albums. Overuse and misuse, on the other hand, are less likely to be overcome by the market. There is no way to prevent overuse or misuse if there is no controlling owner of the product.

B. Other "Quasi-Creation" Costs

Even after the original recording has been made, there can be other costs that require investments that occur many years after the original creation. Changes in technology or tastes might require finding old recordings and bringing them up to whatever the current standards might be. For example, we are undergoing one of these technological transformations right now thanks to the Internet.

I am referring to a concept popularly known as the 'long tail' which claims that Internet sales allow consumers to consume a much wider variety of products than the old fashioned retail system. The logic goes something like this: old fashioned retailers have a limited amount of shelf space and using this limited space to hold slow selling inventory is a poor business decision. Thus CD retailers would hold only a small fraction of the total number of sound recordings (the popular ones) that had been produced. Consumers would have to special order the more obscure recordings that were still in the catalog or shop in a specialty store with a larger inventory. Because of this, record companies kept their catalogs relatively small, compared to the full set of sound recordings that had been produced. Consumers with somewhat more obscure tastes would have had difficulty getting the CDs they desired. Perhaps a few stores in large cities would have

a large enough selection to keep these consumers satisfied in those cities. In smaller cities the population would not be large enough to cater to these minority tastes. Thus the sound recording market would be more highly concentrated in a few top albums due to the reality of retailing.

The Internet frees up these constraints. Now the entire world is one large Internet city. Online sites can carry a much larger number of titles than can physical retail outlets. iTunes, for example, is said to carry in the vicinity of one million songs in its inventory, which is the equivalent of one hundred thousand albums. How many physical retail stores could match that output? And online music stores are still in their infancy. There is some academic work claiming that for consumers with access to this kind of inventory, obscure items make up a larger percentage of their purchases.¹⁴ This is the idea of the long tail.

Although I suspect that some of the claims of the long tail are overstated, it is possible that the Internet will make it economical to bring back certain slow selling sound recordings that might not have had enough of a market to cover the costs of the physical store regime but which can be profitably sold on the Internet. If this is correct, there will need to be some upfront expense to find, catalog, restore and convert these sound recordings before bringing them to market. It is most reasonable to expect, as we normally expect, that these investments will be best made by owners, meaning copyright owners, who stand to profit from this activity.

Just as some property right is usually required to induce the production of entirely new works, some form of property right is likely to be required to engender the efficient resuscitation of old works as new technologies come along. The Internet is just one example and we can be sure there will be others down the road. Since there is no end to possible market changes, the requirements of quasi-creation require permanent ownership.

IX. CONCLUSIONS

I have undertaken in this report to examine what some of the economic consequences might be if the EU lengthened their copyright law term for sound recordings to match that in the US. What has been learned as a result of this exercise? First, it must be admitted that economists are not able to state definitively whether such a change would be efficiency enhancing or not.

Nevertheless, there are sound economic reasons supporting a position that the EU should increase copyright length to match the US. This report has also raised some issues that are not usually decided on economic grounds alone but that are usually of concern to policy makers.

The most important finding is the positive impact on the production of new works that would be brought about by such a change. Contrary to some expectations that copyright extension couldn't have any impact on production because the revenues would be vanishingly small, the empirical evidence adduced in this report indicates that the revenues generated by sound recordings in years 50-95, the years of copyright extension being considered, are a very substantial proportion of revenues generated in the first 50 years of copyright. Even after reducing these nominal distant revenues to put them in present value terms, the amount of revenues generated in years 50-95 is a non-trivial percentage of the present value of revenue generated during the first 50 years. This means that sales of records more than 50 years after

¹⁴ See Brynjolfsson et. al., (2003). The most popular version of this hypothesis (including several assertions I consider rather unreasonable) appeared in Wired Magazine, October 2004, in an article by Chris Anderson.

their original production are still a reasonable component of revenues and can therefore be expected to impact the behavior of record companies and their production of new recordings.

The current differential in copyright length between the EU and the US will tilt European record companies and recording artists toward producing recordings intended for the US market as opposed to producing records focused on the EU market. Although economic analysis is indifferent about whether countries have a sound recording industry that creates products intended for local consumption and consistent with local culture, most countries seem to consider having a healthy domestic recording industry focused on the local population a worthwhile goal.

Unauthorized copying has harmed the revenues of record producers and altered the balance between consumption and production that was envisioned in copyright law. If the balance had been proper prior to such unauthorized copying, then its impact would be to require that the current copyright length be extended.

Against these arguments are the costs of extending copyright. Economic theory, ignoring any benefits of ownership (stewardship) per se, posits that efficiency requires allowing copyright owners to receive not a penny more than the minimum necessary to persuade them to voluntarily create the product. Even ignoring ownership efficiencies, the ideal copyright law under these circumstances could nonetheless have a copyright length of infinity. The potential downside of copyright is the presumed reduction in consumption brought about by higher prices. Yet there has been no empirical examination of the size of the additional costs imposed on consumers by copyright. In the vast majority of instances, copyright provides no monopoly power to the copyright owner and the only cost advantage that would accrue to consumers of non-copyrighted works, would be the savings in not having to pay the creator of the work. When actual monopoly power exists, it is the type of monopoly power that is associated with the unique individual abilities of the creators. In those instances where such monopoly power exists, irrespective of the fact that economic efficiency would be improved if such monopoly power were reduced, such reduction would be at variance with the treatment of this type of monopoly power elsewhere in the economy. Thus the size of the potential harm is completely unknown and the removal of this harm has not been thought to be sufficiently important to try to bring it about in other part of the economy. It is not clear, therefore, how much weight should be given to this potential cost in a society that has other goals beyond that of economic efficiency.

Finally, there are benefits of copyright that are due merely to the fact that it provides ownership over valuable resources. These considerations, by themselves, argue for permanent copyright.

In conclusion, there are many economic arguments, and some non-economic arguments, that can be adduced to suggest that it would be rational for the EU copyright on sound recordings to be increased in length.

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