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The "Competitive" Value of Music to Commercial Radio Stations [*]

Paul Audley [†], *Marcel Boyer* [‡]

Résumé / *Abstract*

Nous proposons dans cet article une méthode permettant d'inférer, du comportement et des choix des diffuseurs, la valeur « concurrentielle » qu'ils accordent à la musique enregistrée et d'obtenir de cette valeur inférée les montants qu'ils devraient verser aux auteurs, compositeurs, interprètes et producteurs au chapitre des droits d'auteur. Nous appliquons la méthode sur des données canadiennes. Le cadre institutionnel de référence nous est fourni par la cause de 2004 devant la Commission du droit d'auteur du Canada relative au tarif applicable à la radio commerciale. Nos résultats montrent qu'une hausse substantielle des paiements pour droits d'auteur s'impose : ces paiements « concurrentiels » devraient être plus du double de ceux que l'industrie versait effectivement au moment des audiences de la cause.

Mots clés : évaluation des droits d'auteur, radio commerciale.

Our objective in this paper is to develop a methodology to infer from the behaviour and choices of broadcasters the "competitive" value they attach to the use of music, more precisely sound recordings, and to derive from such an inferred value the proper "competitive" copyright payments to be made to authors, composers, performers, and makers of sound recordings. We illustrate the methodology by applying it to Canadian data. The background is provided by the statement of case and supporting proof presented in the 2004 proceedings before the Copyright Board of Canada on the commercial radio tariff. The results called for a significant increase in copyright payments by Canada's commercial radio industry: the proper competitive copyright payments should be substantially more than double what the industry was paying at the time of the hearings.

Keywords: *copyright valuation, Commercial radio.*

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1. INTRODUCTION

The purpose of this paper is to establish what would constitute equitable remuneration to owners of copyrights for the use of musical works by commercial radio stations.[1]

In 1997 the Canadian *Copyright Act* was amended with respect to both performers' rights and the rights of makers of sound recordings.[2] Sections 15 and 19 of the *Act* conferred specific rights on performers that they had not enjoyed in the past. Among the rights granted to performers was the right to receive equitable remuneration for the performance in public or the communication to the public of the performer's performance embodied in a published sound recording. Under this provision, broadcasters who communicate to the public performers' performances embodied in a sound recording must pay equitable remuneration to the relevant collective society, subject to a provision that limits the right to such remuneration to Canadian performers and to performers who are nationals of countries that have ratified the Rome Convention. The revisions made to the *Copyright Act* in 1997 also extend the rights described in Section 18 of the *Act* with respect to sound recordings.[3] The relevant revision of the *Act* extended to the makers of sound recordings the right to equitable remuneration for the performance in public or the communication to the public by telecommunication of published sound recordings. This right of remuneration was limited to Canadian makers of sound recordings and to makers that are nationals of Rome Convention countries, or to sound recordings for which the fixations occurred in Canada or a Rome Convention country. As in the case of the performers' rights, the requirement to pay equitable remuneration provides that such payment should be made to a collective society.[4]

The premise of the analysis presented in this paper is that the appropriate copyright tariff to be paid by commercial radio (CR) stations for their use of copyrighted musical works should be based on the amount that those stations would willingly pay if they were confronted with a well-functioning market for the rights to use the sound recordings in question. Equitable remuneration corresponds to that level of compensation that would emerge in a competitive

[1] The *Copyright Act* stipulates that the maker of a sound recording and the performer whose performance is embedded in that recording are entitled to an equal amount of compensation.
[2] Through this paper, references to "sound recordings" should be interpreted as referring to sound recordings that embody musical works and performers' performances.
[3] It may be useful or interesting to note that American radio stations are not required to pay any amount to performers and makers for the communication to the public of a published sound recording.

market where willing buyers and willing sellers, each and every one of them being "price-takers", would freely agree on transactions. Such an approach meets the requirement that the level of remuneration established should be equitable for both the sellers and the buyers. In a market situation where both sellers and buyers are participating voluntarily, the seller is receiving a price the buyer has agreed to and the buyer is paying a price the seller has agreed to. They will likely transact up to the point where the marginal value of an additional transaction for the buyers (demand) is just equal to the marginal cost of that additional transaction for the seller (supply), where marginal cost may be interpreted either as a short-run marginal cost or as an all-inclusive long-run one. There is a general agreement between collective societies, broadcasters and the Board that equitable remuneration should be equitable to copyright owners and users and should reflect the value the copyrighted works contribute to and the benefits the users derive from them as programming content.

On the demand side, the buyer (in this case a commercial music format radio station) will want to use a quantity of input (in this case, sound recordings) such that the value of the marginal product of this input is equal to its price. The value of the marginal product of sound recordings for commercial radio corresponds to the additional advertising revenue an operator of a music station can obtain from using an additional unit of sound recordings. This additional revenue is given by the "selling price" or advertising rates of the buyer's product (its audience characteristics) times the marginal efficiency or productivity of sound recordings (music format) in attracting listeners. A similar process applies to the purchase of other inputs.

On the supply side, the all inclusive long-run marginal cost should represent the payment for the marginal or additional unit of sound recordings produced which would justify its production by the seller. In the present case, the seller is the music industry comprising authors/composers, performers and makers of sound recordings. This payment must cover the direct material cost, the opportunity value of time spent or invested, the opportunity value of the creation/innovation effort, etc. The relevant cost concept differs between the cost of creating or producing an original work (writing/composition, performance/interpretation, fixation in a sound recording), and the cost of the reproduction or repeated use of the sound recording. The first cost may be significant, while the second will typically be low, even very close to zero.

[4] The Canadian *Copyright Act* and the Copyright Board practice clearly foster collective administration.

It is not an easy matter to identify such a price given the very particular characteristics of the commercial radio industry, the basis on which that industry has access to sound recording content, and the resulting absence of a market process for determining the price of use. However, the objective must be to find a price that would ensure that operators of music radio stations are properly and equitably compensated, that is, a price that would ensure that the risk-adjusted rate of return on capital (RAROC) is competitive and that at the same time the authors/composers, performers and makers are properly and equitably compensated.

All inputs or factors of production used in generating (advertising) revenues in the commercial radio industry should be properly compensated at their respective "competitive equilibrium" levels. If one input, such as sound recordings, were priced below, or above *mutatis mutandis*, its competitive equilibrium level, then other inputs, such as direct labour and/or capital, could benefit from partially capturing the sound recordings' contribution to the value of the commercial radio industry, thereby generating a socially costly misallocation of resources. In a sense, the market equilibrium between willing buyers and willing sellers in the specific market considered here, namely the portfolio of copyrights in sound recordings, may involve adjustments in related markets for other inputs used in the commercial radio industry, such as capital, labour, and materials.[5]

Sound recordings are as close as can be to pure information goods in the economists' jargon: once produced, sometimes at high cost, they can be used, reproduced and shared at close to zero cost. Short term or static efficiency calls for a zero price so that their use is maximized. On the other hand, unless the resources (capital, time, talent, creativity) used for the production of the first or original copy are properly compensated, the quantity and quality of sound recordings cannot be optimal: hence the conflict between static and dynamic efficiency. It is well known that efficiency-prone market mechanisms need some help here both to emerge and to function at low cost. One way out of this Gordian knot is to accept the inevitable and necessary distortions: either a lower than optimal production or a lower than optimal dissemination.

[5] Part of the value would also be captured by advertisers through lower than "competitive" rates that would reflect lower costs.

It turns out that an *efficient* solution, that is, a solution that minimally distorts efficiency, is to grant property rights, here copyrights, to the producers of information goods, and create and foster market making processes and institutions aimed at maximizing trade and exchanges between willing buyers and willing sellers in copyrighted products, conditional on ensuring proper compensation of producers. In such a context, the contributions of different users of copyrighted works must be assessed by determining either what such users would willingly pay for such works in a competitive environment or what pricing level and structure would lead such users to demand or consume quantities and qualities of works close to their static efficient use levels. Characterizing the relevant competitive environment must necessarily be case specific. This is the task we tackle here in the context of sound recordings used by the commercial radio industry.

Since the price for the right to use sound recordings cannot be established on a market basis, the role of institutions such as the (Canadian) Copyright Board is to be a surrogate for such a competitive market, by determining, based on the best evidence it can find, what the competitive, efficient, minimally distorting price would or should be if such a transaction mechanism operated efficiently. In so doing, the Board needs to examine all information and any relevant proxies or indicators of what such a price would and should be. Such information may be of different types and forms: information on the commercial radio industry; information on the behaviour of the operators of commercial radio stations that broadcast in a music format; the prices of substitute products or services and also hypothetical, simulated competitive processes. The route we take here is to infer from the observed behaviour of CR operators what "competitive level" contribution or payment, in the form of a "competitive" price times a quantity, they would implicitly be ready to make to the authors/composers, performers and makers of sound recordings, if not individually at least globally.[6]

The profit/value maximizing radio station operator will use sound recordings and any other program content in such proportions that their marginal contribution to profitability and value is the same: the last unit, minute or half-hour, of recorded music content and the last unit, minute or half-hour, of any other program content must generate the same net profit (marginal revenue or value minus marginal cost or price). Otherwise, profitability and value would not

[6] It is evident that the transaction costs of negotiating compensation with each author, composer, performer and maker for each sound recording would be astronomical, hence the commonly preferred alternative of a broad and encompassing blanket licence priced by an impartial independent body.

be maximized and the operator would reduce one and increase the other, given the total broadcast time available. If the operator rationally aims to maximize the profitability or value of the station and chooses accordingly a precise level of program sharing, X% for sound recordings and (1-X)% for other program content, then it must be the case that the marginal benefit of the last minute of music is literally equal to the marginal benefit of the last minute of other program content, in particular talk content.

Our objective in this paper is to develop a methodology to justify on theoretical grounds such an approach to the value of sound recordings for commercial radio stations and to illustrate, from Canadian data, a way to compute empirically such value, and hence determine the payments to be made by commercial radio stations to copyrights owners. Although the model developed in the following section and the empirical value obtained in section 4 are somewhat related to the Canadian case, we think that both the theoretical analysis and empirical procedure can be applied, *mutatis mutandis*, to other national cases.

2. THE MODEL

In the absence of a well functioning market, the Copyright Board must determine the value that recorded music represents for commercial radio (CR) operators, and translate this value into a price or payment to authors, performers and makers for their rights in recorded music.

Economic analysis provides a critical perspective on how to determine the appropriate price of recorded music because it establishes the link between the relative use of inputs (recorded music and talk) in the production of broadcast radio and the relative value of those inputs. In the absence of a “market” for recorded music in broadcast radio, the price of recorded music is unknown. However, the relative broadcasting time devoted to music and talk is known, and this relative use of the inputs can be used to directly infer the relative value of recorded music to radio broadcasting.

Alternatively stated, while the price of recorded music is not known in the absence of a market, the relative use of recorded music and talk is known and easily measured. Economic analysis provides the missing direct link between the measurable relative use of recorded music and talk in commercial radio broadcasting, and the *implicit* price of recorded music, that is, the price of recorded music implied by the relative use of recorded music and talk.

To demonstrate this link between the relative use of recorded music and talk, consider a simple model with the following simplifying assumptions that are made to facilitate the narrative, but are not essential to the key result: CR operators seek to achieve a competitive expected risk adjusted return on capital (RAROC) representing the best alternative use of their invested capital. In so doing, they will spend on different program contents those amounts that leave them with such an expected RAROC, given their other operating expenses and their revenues from advertising and other sources, which clearly will depend on many factors including the amounts spent on different program contents.

For simplification, assume that all revenues come from advertising and that there are only two types of program content, namely "music" and "talk". Let us assume also that the typical relevant part of the day lasts, for example, 3 hours and that the allocation of airtime between the different program contents in a given part of the day is done on the basis of N-minute increments. Assume for simplification that N=1.

We will assume that the additional (or marginal) costs to commercial radio operators of a one-minute increment in music content and of a one-minute increment in talk content are both equal to zero since the payment for copyrights on recorded music played by commercial radio stations is typically set as a *fixed percentage* of revenues and the payment for talk content is typically set on a contract basis with a zero marginal cost within a broad range of content time.[7]

The total number of minutes of program content in a given part of the day is total broadcast time minus all other items such as station promotion, station identification, advertising, etc.

[7] The assumption of a zero marginal cost of music content is more a fact than an assumption as radio stations that operate in a music format can play as many minutes of music as they wish once their regulatory type is determined and their copyright dues, which are independent of their use of music, are paid. There are just two categories of stations for the purpose of music royalty payments: music stations and talk stations. Talk stations, that is, stations with not more than 20% of the broadcast day accounted for by music, pay a lower percentage rate royalty. A very small number of stations operate in a talk format. The payment for copyrights in sound recordings is made as a percentage of advertising revenues, irrespective of the precise use of music in program content once the type of radio station is taken into account. The assumption of a zero marginal cost of talk content can also be defended based on the actual operating practices of radio stations. For example, when a program host or hosts are hired for the morning show on local music radio stations, they will be hired typically to host the on-air segment from 6 AM to 9 AM. The amount they are paid will not vary depending upon whether they are providing 8 minutes, or 12 or 15 minutes, of talk each hour. With respect to the news content of their spoken word programming, stations will in almost all cases rely upon a non-exclusive subscription to a news

Let us assume for now, to simplify the analysis, that 100 minutes are available for program content in a three hour period. The goal of a CR broadcaster is to find the proportion of the 100 minutes to be devoted to music and talk in order to yield the highest profit. CR broadcasters will alter the relative allocation of time between music and talk if it is profitable to do so. For example, a broadcaster will devote one additional minute to music, and consequently one less minute to talk, if the additional advertising revenue associated with the additional music programming offsets any loss of advertising revenue due to the reduction in talk content time. In responding to the market forces created in the advertising market, broadcasters will settle on a particular allocation of time between music and talk such that there is no opportunity to increase revenues by reallocating minutes between music and talk.

This result can be compared to that achieved if the market for recorded music was competitive. In a competitive market, the CR broadcaster would face prices for recorded music content and talk content, as determined by market forces. Advertising rates for airtime would also be determined by market forces. To maximize the profit or value of the firm, the broadcaster would allocate the available time between music and talk so that the last minute of each type of content generates the same *net* advertising revenue. That is, the additional profit (additional advertising revenue less the additional cost) would be identical for the last minute of music and the last minute of talk time allocated by the broadcaster. If the CR broadcaster could increase profitability by increasing the amount of time devoted to music relative to talk, it would do so. Consequently, the relative amount of time devoted to music and the relative amount of time devoted to talk must be such that their marginal contributions to profits (hence net of marginal costs, if any) are exactly equal.

In the absence of a market for recorded music, the closest surrogate to the *implicit* per-minute price or value of music content and talk content is the additional contribution of each to advertising revenues. Given our simplifying assumption that the additional cost of a minute of music and a minute of talk are equal to 0, the additional per-minute contribution of each to advertising revenues must be equal. The tariff rate that approximates the implicit competitive market price for music must therefore be such that the payments for the different program contents, music and talk, are *proportional* to their respective numbers of minutes of programming.

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service or services. Again, the amount paid does not vary based upon the number of minutes of air time they fill with content provided by such new services.

Note that the total contributions to advertising revenues of each type of content (as distinct from the contribution made by the last minute of each type of content) would be larger than the additional contributions of the last minute programmed times the number of minutes of each type of content. The difference would serve to cover other expenses as well as the cost of capital or the return on the capital invested (the RAROC).

Therefore, if the CR operator chooses an (M,T) allocation of airtime between recorded music and talk, it must be because that is the allocation which maximizes the profits or value of the station. This is illustrated on Figure 1 where, in any 100 minute time length of program content, the value of the marginal product of music content in generating advertising revenues is decreasing in the level of music content measured in minutes from left to right, and the value of the marginal product of talk content in generating advertising revenues is also decreasing in the level of talk content measured in minutes from right to left. The profit or value maximizing time allocation is reached at the intersecting point between the vmp(M) and the vmp(T) curves, that is, vmp(M) = vmp(T) and $M + T = 100$.

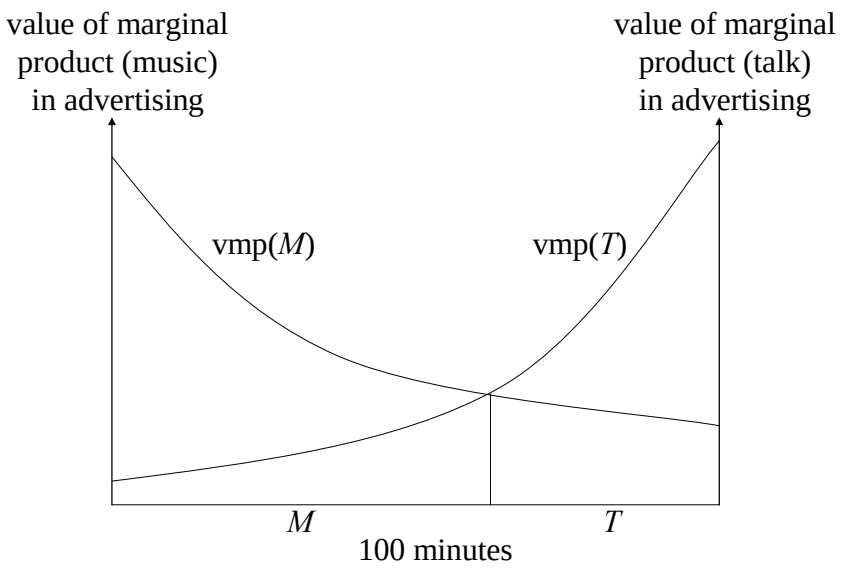

Figure 1

More formally, denote by $R(M,T)$ the revenue that the station earns from advertising; the marginal revenue of M is denoted $R_M(M,T)$ and the marginal revenue of T is denoted $R_T(M,T)$, corresponding respectively to vpm(M) and vpm(T) in Figure 1, each being strictly positive and decreasing in the relevant input. Assuming that the total length of time available

for content is $Y = 100$. the problem of the CR operator is to maximise profits, that is, $R(M,T) - C_M - C_T$, subject to the constraint $M + T = Y$, where C_M is the cost of music content and C_T is the cost of talk content both assumed to be fixed costs. This is a simple problem, with a concave objective and a convex (linear) restriction. It can be resolved by using the Lagrangian expression: $L1(M,T,\lambda) = R(M,T) - C_M - C_T + \lambda(Y - M - T)$. The first order conditions can be expressed as follows, for $i = M,T$: $R_i(M^*,T^*) = \lambda$ with $\lambda[Y - M^* - T^*] = 0$. Since by assumption the marginal revenue functions are positive, the first order conditions implies that $\lambda > 0$, which, when substituted into the complementary slackness condition, implies that the time constraint binds, that is $M^* + T^* = Y$. Figure 1 is really nothing more than a drawing of the two first order conditions of this Lagrange problem and therefore the height of the two marginal revenue functions at their intersection point is equal to the value of the Lagrange multiplier λ.

Suppose now that the marginal cost of music content and the marginal cost of talk content are both positive and equal to ν, where ν is such that $R_M(M^*,T^*) = R_T(M^*,T^*) = \nu$. The CR operator's new problem can be resolved by using the new Lagrangian expression: $L2(M,T,\lambda) = R(M,T) - C_M - \nu M - C_T - \nu T + \lambda(Y - M - T)$, whose solution is as before (M^*,T^*) but with the time constraint being now (weakly) non-binding with $\lambda = 0$. At their intersection point in Figure 1, the value of marginal product of both music and talk is the same and it reveals an *implicit* "competitive price ν" for the one-minute length of music content and talk content. This implicit competitive price is equal to the Lagrange multiplier of the time constraint in the original problem $L1$ where the marginal costs of both music and talk were assumed to be 0. Indeed, the marginal profit of relaxing the time constraint, equal to $\lambda[dY]$ in $L1$ must be equal to both $\lambda[dM^*]$ and $\lambda[dT^*]$, that is, equal to the marginal value of one additional minute of music or one additional minute of talk.

As illustrated in Figure 2, if the CR operator were facing a competitive price of ν per-minute of music content input, he would use music content M^* where $\text{vpm}(M^*) = \nu$; similarly, if he were facing a competitive price of ν per-minute of talk content input, he would use talk content T^* where $\text{vpm}(T^*) = \nu$. In that sense, the intersecting point $\text{vpm}(M) = \text{vpm}(T)$ reveals an *implicit* competitive price ν with $\text{vpm}(M^*) = \text{vpm}(T^*) = \nu$. If that is so, the implicit "competitive payments" to those inputs would be νM^* and νT^*, corresponding to

the payments that would be willingly made in such a competitive market by the CR operator to the providers of music and talk contents. In other words, if the market price of each minute of music content is *v*, the CR operator would buy and broadcast M^* minutes of music content; similarly, if the market price of each minute of talk content is *v*, the CR operator would buy and broadcast T^* minutes of talk content. The (M^*, T^*) allocation is an observed decision made by the CR operator. Given the operator's profit or value maximizing objective, we can infer that in the "competitive" environment that would generate this allocation, the CR operator would be making payments for program content that are proportional to the (M, T) allocation: of the total program content cost $v \cdot M + v \cdot T$, a share of M % would go for recorded music and a share of T % to talk content as illustrated on Figure 2.

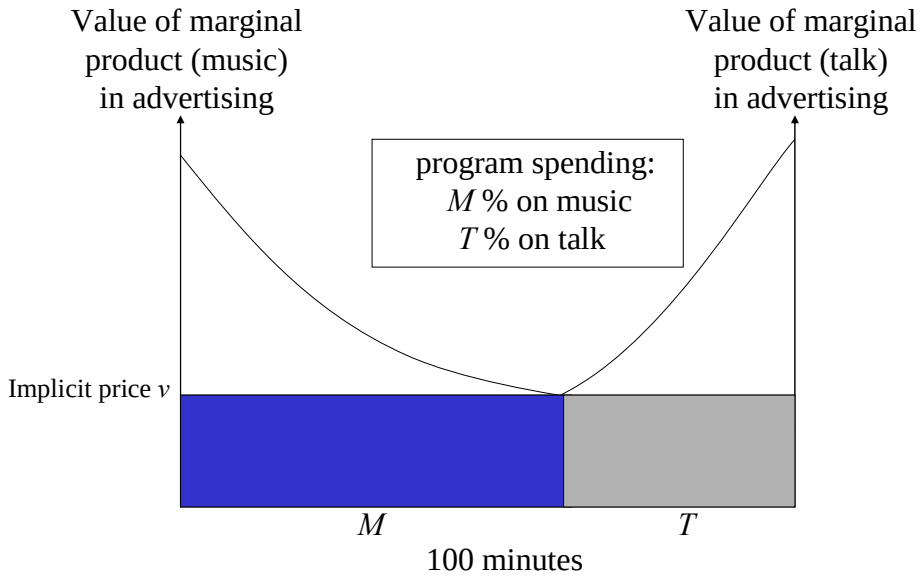

Figure 2

Some remarks should be made regarding the above conclusion. First, it is possible that talk hosts have idiosyncratic characteristics that make them, more precisely each one of them, capable of exerting some market power, thereby catching a higher proportion of advertising revenues than their implicit "competitive" value given by the implicit price *v* times the number of minutes of airtime *T*. If that is so, the proportion of talk content cost in total program spending could be somewhat larger than T % but the additional payment would come from difference between the total value of talk content, measured by the area under the vmp(T) curve up to the intersection point, and would not change the intersection point itself,

that is, the (M,T) time sharing illustrated in Figures 1 and 2. Such hypothetical market power of talk hosts is illustrated on Figure 3.

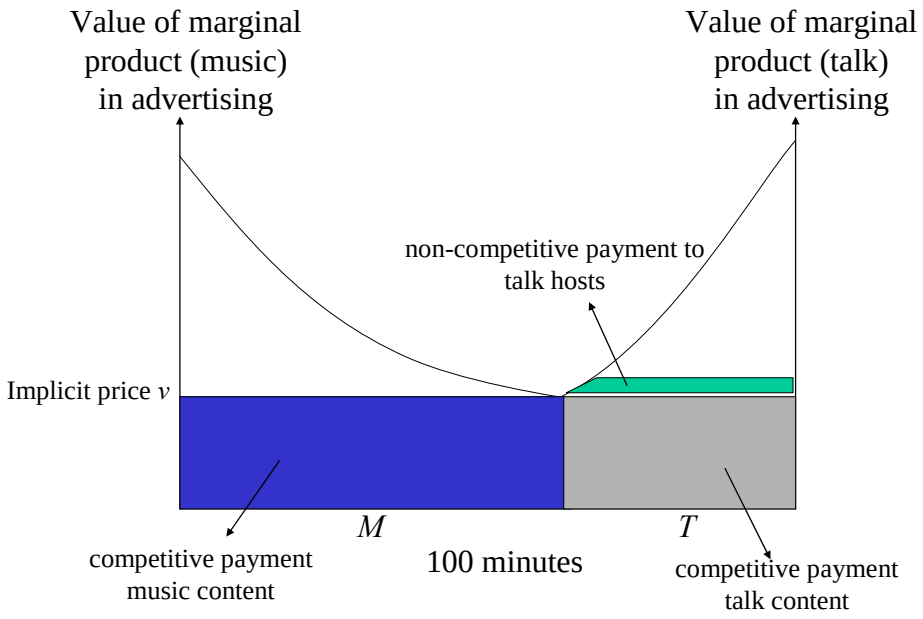

Figure 3

Second, the above analysis does not mean that the pricing of recorded music is or should be done on a per-minute basis. They are not and should not. In fact, there are good reasons why the payments to copyright holders should be made as a percentage of revenues, hence an effective marginal price equal to 0. The main reason is that the short run marginal cost of using additional minutes of recorded music is indeed 0 since, as mentioned above, recorded music is an information good. But the *implicit* competitive price revealed by the observed behaviour and decisions of CR operators remains nevertheless positive at v and can be used to determine the contribution payments of the CR industry to music copyright holders.

Third, the implicit competitive price v, revealed by the CR operator, is more a measure of the willingness to pay for recorded music rights than a strictly defined competitive price.[8] Indeed, the notion of competitive price is ill defined in the current context as the short run marginal cost (of playing additional recorded music) is clearly zero while the long run marginal cost (of creating and recording new works) is significantly above zero. As for pure public goods, the use of recorded music by CR operators should be competitively priced on the basis of their

[8] We are grateful to an anonymous referee for pointing out this important observation to us.

respective willingness to pay, that is, according to Lindhal pricing principles: each user pays a different price and the sum of those individual prices becomes the price paid to the producer of the public good who will find it profitable to increase or reduce its supply of the public good according to whether the total price (the sum of the individual prices) is above or below the long-run marginal cost of adding to the stock of recorded music, that is, of creating and recording additional musical works, as the Lindhal equilibrium would command. It is in that sense that we can use the expression "implicit competitive price", which in the Canadian commercial radio context will be transformed into a percentage of the CR operator's advertising revenues.

3. EMPIRICAL IMPLEMENTATION

In this section, we apply the above theoretical framework and results to Canadian data. To do so, we first compute the observed time sharing between music and talk contents in different day parts and the contribution of those day parts to advertising revenues, and second, we compute the observed payments made for the talk content by CR operators. From these two values, we can infer the competitive value of music content, that is, the revealed willingness to pay for music content, which will be the basis for computing the tariffs or payments to be made by CR operators to copyright holders in music recordings.

On expects that the (M,T) sharing of airtime differs by day periods. Moreover, different day parts may generate different levels of advertising revenues. Hence, the empirical implementation of the above analysis requires the observation of the time allocation as well as the advertising revenues by day parts. The following tables present such data for Canadian radio stations.[9] As Table 1 indicates,[10] over the total broadcast day, sound recordings represent 76.1% of all airtime devoted to program content. Sound recordings also account for a substantial majority of the program content hours during every part of the day. Even during the 6:00 a.m. to 9:00 a.m. period, the period when sound recording use is lowest, just under

[9] See Audley, Boyer and Stohn (2004) for details.

[10] Tables 1 and 2 are taken from Erin Research (2004, Tables 3 and 5). The study was based on a randomly drawn sample of commercial radio stations, which were members of the Canadian Association of Broadcasters (CAB) and broadcasting in 2003-2004 in a music format. Because the sample was drawn at random it is logical and reasonable to assume it is not skewed toward either overstating or understating the presence of sound recording content on commercial stations.

two thirds (63.5%) of the content is sound recordings. The percentages vary through the remainder of the day from a low of 70.5% of program time during the noon to 1:00 p.m. period to a high of 83.5% during the 3:00 p.m. to 4:00 p.m. period. If we look at the broadcast day from 6:00 a.m. to midnight, excluding commercial content only, the Erin Research (2004) study found that 73.7% of the remaining total airtime within the schedule was accounted for by recorded music (Table 2). If neither commercials nor station identification and promotion are excluded, then a proportion of 67.3% of all broadcast hours over the same period is accounted for by sound recordings used as feature program content.

TABLE 1

Breakdown of Program Content: Sample Stations, 2003-2004
(% of broadcast hours devoted to program content – by day part and all day)

Day Part	Program Type	Program Content Breakdown
6:00 a.m.-9:00 a.m.	Sound recordings	63.5%
	Other programming	36.5%
9:00 a.m.-3:00 p.m.	Sound recordings	77.8%
	Other programming	22.2%
Noon - 1:00 p.m.	Sound recordings	70.5%
	Other programming	29.5%
3:00 p.m. - 4:00 p.m.	Sound recordings	83.5%
	Other programming	16.6%
4:00 p.m. - 6:00 p.m.	Sound recordings	77.7%
	Other programming	22.3%
6:00 p.m. - 7:00 p.m.	Sound recordings	76.6%
	Other programming	23.4%
7:00 p.m. - Midnight	Sound recordings	79.2%
	Other programming	20.8%
All Day	Sound recordings	76.1%
	Other programming	23.9%

Source: Erin Research (2004)

TABLE 2
Percentage Breakdown of Broadcast Hours
Including and Excluding Commercials
6:00 a.m. – Midnight, 2003-2004

Type of Broadcast	% of Broadcast Hours Excluding Commercials	% of All Broadcast Hours Including Commercials
Sound recordings	73.7	67.3
Newscasts	5.9	5.4
Other programming	17.3	15.8
Station IDs/Promos	3.1	2.8
Commercials	-	8.7
Total	**100.0**	**100.0**

Source: Erin Research (2004)

On may wonder if real time allocation is a good indicator of the role of music in attracting listeners to radio stations. Is it possible that music simply serves to fill "empty space" between talk content segments, without being a prime attracting factor? The advertising and media consulting firm NextMedia analyzed the way commercial radio stations and their program content are marketed to listeners and to advertisers. The conclusions the NextMedia study reached include the following:

> "In NextMedia's opinion, music formatted radio stations depend primarily on music to attract both listeners and advertising revenue.
>
> Radio stations target consumers and advertisers with station formats. These formats are largely determined by the mix and type of music a particular radio station plays.
>
> Advertisers buy spots on radio stations that reach their desired audience, demographically and psychographically. Radio stations attract these audiences primarily by the music they play, and to a lesser degree, by the information, personalities and promotions that are packaged around the music.
>
> Advertisers seek environments that enhance their brands. The music a station plays, along with the music and artist-related sales opportunities available to advertisers, allow for dynamic brand association. . . .
>
> Less talk, more music is being used as an important selling point to attract and retain listeners by stations across the country." [11]

Hence, based on those conclusions of NextMedia, we can conclude that the (M,T) sharing of airtime model does represent a strategic profit and value maximizing decision by CR operators. Moreover, using data on airtime allocation will not lead to an exaggeration of the value of music.

Audience size

To better quantify the role recorded music plays in helping commercial radio stations attract listeners and, as a result, advertising revenue, it is necessary to look at the size of the audience during the various parts of the day. To the extent that audiences are, for example, listening to a greater degree during periods of the day when sound recording use is lower and listening less to periods of the day when sound recording use is higher, such differences should be taken into account in establishing appropriate copyright tariff rates for the use of sound recordings. Statistical data concerning the size of the audience to commercial radio stations by day part can be obtained from Statistics Canada. The data, based on the BBM[12] survey as analyzed by Statistics Canada, are shown in Table 3.

TABLE 3
Aggregate Hours per Week of Listening to Commercial Radio Stations

	Hours of Listening (000s)				% of Listening hours				
Day Part	1990	1995	2000	2002	1990	1995	2000	2002	4-year average
6 a.m. - 9 a.m.	87,626	92,828	92,083	90,710	22.22%	21.13%	21.55%	20.97%	21.47%
9 a.m. - 3 p.m.	167,086	192,352	185,619	189,495	42.37%	43.78%	43.45%	43.82%	43.36%
3 p.m. - 7 p.m.	87,133	99,026	99,267	101,504	22.10%	22.54%	23.24%	23.47%	22.84%
7 p.m. - midnight	52,477	55,146	50,256	50,764	13.31%	12.55%	11.76%	11.74%	12.34%
TOTAL	394,322	439,352	427,225	432,472	100.0%	100.0%	100.0%	100.0%	100.0%

Source: BBM Survey, Statistics Canada

Using the four-year average breakdown of listener hours by day part and consolidating the Erin Research study's findings into the same four time periods, the average percentage of content consisting of recorded music weighted by the size of the audience can be obtained. During the period from 6:00 a.m. to midnight, a weighted average share of 75.1% of the program content heard by listeners to music stations is sound recordings (Table 4).

[11] Nancy Smith (2002), page 61.
[12] The Bureau of Broadcast Measurement (now BBM Canada) is a not-for-profit cooperative of broadcasters and advertisers, whose mandate is to provide high-quality, impartial measurement of radio audiences in Canada.

TABLE 4
Estimate of Share of Listening to Program Content on Music Stations Accounted for by Sound Recordings

Day Part	% of Listener Hours	Sound Recordings as % of Program Content	Weighted Share of Program Listening
6:00 a.m. – 9:00 a.m.	21.47	63.5	13.6
9:00 a.m. – 3:00 p.m.	43.36	77.8	33.7
3:00 p.m. – 7:00 p.m.	22.84	78.8	18.0
7:00 p.m. – Midnight	12.34	79.2	9.8
Total 6:00 a.m. - Midnight	**100.0**	**76.1**	**75.1**

Advertising intensity and rates

To examine more closely the relationship between content consisting of recorded performances of music and the ability to earn advertising revenues, the distribution of commercial content throughout the broadcast day must also be examined, insofar as advertising time and rates vary over the day. Table 5 provides that comparison, examining whether, and to what degree, commercial content may be more focused in one day part than another. This information, based on the Erin Research study, provides assistance in judging whether it is reasonable to assume that, since sound recordings account for an estimated 75.1% of listening hours during the day, they can also be assumed to be delivering 75.1% of the advertising revenue.

On average, 11 hours of commercials were carried during the sample week. This represented 8.7% of the total broadcast hours (126 hours). Within each day part the percentage of broadcast time accounted for by commercials varied. From 6:00 a.m. to 9:00 a.m., 11.5% of the broadcast time was commercials, compared to a low of 6.4% between 7:00 p.m. and midnight, 9.1% for the 9:00 a.m. to 3:00 p.m., and 9.0% for the 3:00 p.m. to 7:00 p.m. day part.

Because the number of broadcast hours within each day part varies, it is also important to look at the overall percentage of commercials broadcast within each day part. For example, 22.0% of all commercials broadcast during the day were aired between 6:00 a.m. to 9:00 a.m. compared to a 21.5% share of listener hours.

TABLE 5
Distribution of Commercials Compared to Distribution of Listening Hours by Day Part

Day Part	Hours of Commercial Broadcast Time/week	Commercials as % of Broadcast time During Day Part	% of All Commercial Time/Week	% of Total Listening Hours/Week During Day Part
6:00 a.m. – 9:00 a.m.	2.42	11.5%	22.0%	21.47%
9:00 a.m. – 3:00 p.m.	3.84	9.1%	34.9%	43.36%
3:00 p.m. – 7:00 p.m.	2.52	9.0%	22.9%	22.84%
7:00 p.m. – Midnight	2.22	6.4%	20.2%	12.34%
TOTAL	11.00	8.7%	100.00	100.00%

This does not mean that only 22% of the commercial revenue earned by music stations is accounted for by the 6:00 a.m. to 9:00 a.m. time period. The 22% figure does not take into account the fact that advertisers pay more for commercials run during parts of the day when audiences are larger. If we adjust the percentages of commercial time by day part to reflect the differences in the 30-second commercial rate, a rough estimate of the commercial revenue generated by each day part can be calculated (Table 6).

TABLE 6
Estimate of Percentage of Commercial Revenue Generated by Each Day Part

Day Part	% of hours in Each Day Part	% of Commercial Time in Each Day Part	Average Commercial Rate for Day Part (Based on Index of 1.00 for 6-9 am)	Estimated Contribution of Each Day Part to Commercial Revenue
6:00 a.m. – 9:00 a.m.	16.7	22.0	1.00	25.9%
9:00 a.m. – 3:00 p.m.	33.3	34.9	.86	35.4%
3:00 p.m. – 7:00 p.m.	22.2	22.9	.86	23.2%
7:00 p.m. – Midnight	27.8	20.2	.65	15.4%
Total 6:00 a.m. –Midnight	**100.0%**	**100.0%**		**100.0%**

In assessing the value sound recordings contribute to commercial radio stations measured in terms of the contribution they make to a station's ability to attract advertising revenue, relatively greater weight should be attributed to day parts that deliver advertising revenues disproportionate to their share of listening hours. Table 6 makes the necessary adjustments to reflect the estimated contribution of each day part to generating the commercial revenues of the station.

It appears therefore that, although the 6:00 a.m. to 9:00 a.m. period accounts for an average of 16.7% of broadcast hours and 21.47% of listening hours with sound recording program content at 63.5%, its contribution to the advertising revenues of music stations is higher at 25.9%. For the remaining part of the day accounting for 83.3% of broadcast time and 78.53% of listening hours and 74.1% of advertising revenues, sound recordings account for 78.6% of program content. The conclusion to which this evidence leads is that recorded performances of music deliver substantially greater value to commercial radio stations than the remainder of the program content they broadcast – which includes news, weather, sports, traffic and the comments of on-air hosts.[13]

Market power of on-air talent

A further question may be raised in relation to the value commercial music stations derive from sound recordings as an input to their program content. That question is whether the program hosts who provide most of the non-news portion of the spoken word program content act as a drawing card for the station that makes them more important than the percentage of the program content they account for. This is related to the small vertically stripped zone of Figure 3.

If we look first at a breakdown of program content that separates newscasts from both recorded music and other program content (Table 7), the contribution of on-air hosts would be included in the 11.1 minutes of "other programming" broadcast every hour during the 6:00 a.m. to 9:00 a.m. period. In contrast, even during this period, 32.8 minutes of every hour involves the playing of sound recordings. Similarly, throughout the 9:00 a.m. to midnight period the contribution of on-air hosts would account for less than 9.1 minutes of every hour, compared to 41.9 minutes of music.

[13] There are significant limitations to the information on which these estimates are based as only 13 of the 30 stations surveyed provided clear 30-second commercial rates by day part. For all stations, and for larger stations in particular, the rate structure is often more complex, making it difficult to determine without further information the typical level of advertising rates in each day part. Further, for all stations there is likely to be a significant measure of rate negotiation that may result in the rates actually charged differing from those in the rate card (although this negotiation of rates presumably affects the rates for all day parts).

TABLE 7
Breakdown of Content of an Average Hour of Broadcast Time
During the 6:00 a.m. to 9:00 a.m. Period and From 9:00 a.m. to Midnight

	6:00 a.m. to 9:00 a.m.	9:00 a.m. to Midnight
Sound Recordings	32.8 minutes	41.9 minutes
Newscasts	7.8 minutes	2.3 minutes
Other Programming	11.1 minutes	9.1 minutes
Station IDs/ Promos	1.4 minutes	1.8 minutes
Commercials	6.9 minutes	4.9 minutes
Total	60.0 minutes	60.0 minutes

Source: Erin Research study.

Even if program hosts add value to commercial stations that may be disproportionate to their contribution to the spoken word content, the on-air talent, by its mere limited use, is certainly less important than the sound recording content in attracting listeners to a particular station and in retaining audiences. This is consistent with the finding of the NextMedia study referred to above. It is also corroborated by the finding of a Circum Network study,[14] which indicates that if the music on their favourite station were to change to a different format, 83% of listeners would switch to a station that offered the kind of music they preferred. Indeed, it appears from that report that CR stations choose their music format as a best response to competitors' choices, as in most cities in Canada listeners who like a particular genre of music have in fact only one station available that offers that music to them. For example, of 23 licensed stations in Toronto, the only music format offered by more than one station in 2002 was Adult Contemporary (AC), with two competing stations. The same is true of stations in the Ottawa-Gatineau region. Halifax had two stations broadcasting in the "Oldies" format and Montreal had two French-language stations broadcasting in the "Contemporary Hit Radio" (CHR) format. In Vancouver, Kelowna, Calgary, Regina, Sudbury, London, Montreal (English stations), Quebec City, Saguenay, and St. John's, the pattern is one station per music format.

This pattern suggests that, in seeking to effectively attract listeners and advertising revenue, station owners focus primarily on choosing a music format not available in the market that is likely to attract a substantial core of listeners, rather than relying primarily upon on-air talent as the basis for establishing a competitive position in the market.

[14] Benoît Gauthier (2002).

In a 2002 decision on the NRCC and SOCAN pay audio tariffs, the Copyright Board of Canada addressed briefly the issue of the importance of sound recordings relative to other commercial radio program content. The Board stated that:

> "[A]lthough music may be what radio mostly provides, that does not mean that it is radio's most important input. The most important part of programming is not necessarily what consumes the most airtime: sports are crucially important to a television station's profitability, but generally represent a fairly small share of overall programming. Radio may be designed around the use of music and musical genres but as a cost, and (probably) as a drawing card, on-air talent is far more important. Commercial radio could reduce its expenses significantly by dispensing with on-air talent and making greater use of SOCAN's and NRCC's repertoires. If it does not, it must be because radio broadcasters consider that the lost advertising revenues would be greater than the cost savings. On-air talent creates the crucial identity link between station and audience. (Decision of the Board, March 15, 2002, page 10)

In the analysis above, we have not assumed that the importance of sound recordings should be judged by the percentage of airtime they account for. Instead, we made an adjustment to reflect both audience size and the number of commercial minutes, as well as the price of advertising within each day part. Even making the assumption that the on-air talent provides substantially greater benefit than its limited share of airtime suggests, the increased use of sound recordings by CR operators since 1987[15] is not compatible with the conclusion that the on-air talent delivers greater value to radio stations than sound recording content. Further, the identity of stations is defined primarily by the format of the music they play, as shown in the Circum Network and NextMedia studies referenced above. Finally, the theoretical model presented above allows the inference on marginal value of different program contents directly from the behaviour of CR operators and the inference points to a direction different from that implicit in the Board's comment.

Comparative value

While the inescapable conclusion appears to be that the sound recordings broadcast provide a greater benefit to music stations than the other programming content offered, a very conservative estimate of the relative importance of sound recordings as an input to program

[15] Audley, Boyer and Stohn, (2004, page 16) write: "For the morning and late afternoon periods combined, the current level of use of music content, a weighted average of 69.2% of program time, represents an increase of 24% since 1987 when the corresponding figure was 56%."

content during the 6:00 a.m. to 9:00 a.m. period would attribute 50% of the value to sound recording content and 50% to the other elements of program content, including the morning show hosts. This attribution of value assumes that the 18.9 minutes of news and other program content (Table 7) broadcast between 6:00 a.m. and 9:00 a.m. delivers as great a benefit in attracting audiences and advertisers as the 32.8 minutes of sound recording content and this in spite of the fact that it is CR operators who decide airtime sharing. Similarly, a very conservative estimate of the importance of sound recordings during the remainder of the day would attribute two-thirds of the value of the program content to sound recordings. This attribution assumes that, although news and other program content accounts for an average of just 11.4 minutes per hour during this 13 hour period, compared to 41.9 minutes of sound recordings, they deliver a third of the value in attracting and retaining listeners.

If these ratios are applied on a *pro rata* basis to reflect the assumed share of advertising revenue generated during the 6:00 a.m. to 9:00 a.m. period and the remainder of the day, then, based on these conservative assumptions, sound recordings account for more than 60% of the value of the program content of commercial stations broadcasting in a music format (Table 8).

TABLE 8
Value Attributed to Sound Recordings and Other Program Content
by Day Part, Weighted According to Commercial Value

Day Part	% of Commercial Value	Program Content Value Attributed to Sound Recordings	Value Attributed to Other Program Content
6:00 a.m. – 9:00 a.m.	25.9%	12.95% (1/2)	12.95% (1/2)
9:00 a.m. Midnight	74.1%	49.40% (2/3)	24.70% (1/3)
TOTAL	100.0%	62.35%	37.65%

To put a dollar figure on the relative "competitive value" of sound recording and other program content, we can make use of CR operators' revenue and expense statements and programming expenses in particular. Table 9 provides a breakdown of the operating expenses of small, medium and large music stations, over the period 1998 to 2002. The total programming and production costs reported for such stations combine costs related to the stations' sound recording content together with all other programming costs, and in particular those related to on-air talent, spoken word or talk programming.

The total cost of programming and production for all music stations combined represents a slightly smaller percentage of the revenue of these stations in 2002 than it did in 1998 (24.9% in 2002, compared to 25.1% in 1998). As Table 9 indicates, programming/production expense as a percentage of revenue declined slightly for small and medium stations, while remaining virtually unchanged for large stations over this period.

The total programming and production expenditures of music stations can then be divided into expenditures related to sound recording content and those related to other program content. The key expenditures relevant to the sound recording content are the music copyright payments made to NRCC, SOCAN, and CMRRA/SODRAC.[16] Using the percentage rate tariffs in effect in 2002, the amount of these tariff payments can be calculated. They are shown in Table 10 for small, medium and large stations, and for all stations combined expressed as a percentage of total programming expense and as a percentage of total revenue.[17]

[16] CMRRA: Canadian Musical Reproduction Rights Agency; SODRAC: Société du droit de reproduction des auteurs, compositeurs et éditeurs au Canada.
[17] Douglas E. Hyatt (2004). Tariff payments for NRCC and CMRRA/SODRAC are as calculated by Paul Audley & Associates Ltd. (PAA).

TABLE 9
Revenue, Operating Expense and Operating Income of Small, Medium and Large Music Stations, 1998 to 2002

	1998	1999	2000	2001	2002
SMALL STATIONS					
Number of stations	140	131	136	143	140
Advertising Revenue	52,459,313	48,194,246	46,990,324	49,179,518	49,088,787
Total Revenue	54,069,214	49,459,721	48,926,672	50,694,488	49,933,861
Operating Expenses:					
Programming/Production	19,736,918	18,274,551	18,090,809	17,538,185	17,858,466
Technical Services	3,925,970	3,461,748	3,586,580	2,915,068	2,852,191
Sales and promotion	13,852,428	13,025,736	11,895,850	12,074,852	12,732,653
Administration and general	19,593,303	17,504,692	16,784,152	16,649,785	16,021,274
Total Operating Expense	**57,108,619**	**52,266,727**	**50,357,391**	**49,177,890**	**49,464,584**
Programming / Production Expense as % of % of Operating Expense	34.56%	34.96%	35.92%	35.66%	36.10%
Programming / Production Expense as % of % of Total Revenue	36.50%	36.95%	36.98%	34.60%	35.76%
Programming / Production Expense as % of % of Advertising Revenue	37.62%	37.92%	38.50%	35.66%	36.38%
MEDIUM STATIONS					
Number of stations	134	134	138	137	139
Advertising Revenue	118,096,101	114,754,309	119,822,737	121,417,541	121,035,105
Total Revenue	**121,264,412**	**118,269,364**	**122,827,783**	**125,259,545**	**124,530,437**
Operating Expenses:					
Programming/Production	37,758,733	35,553,187	38,309,132	37,623,550	37,394,059
Technical Services	6,333,011	6,493,782	6,280,628	6,480,212	6,266,446
Sales and promotion	31,322,921	30,199,504	32,704,962	34,823,572	33,841,062
Administration and general	36,554,592	36,002,623	36,106,187	36,759,054	38,752,500
Total Operating Expense	**111,969,257**	**108,249,096**	**113,400,909**	**115,686,388**	**116,254,067**
Programming / Production Expense as % of % of Operating Expense	33.72%	32.84%	33.78%	32.52%	32.17%
Programming / Production Expense as % of % of Total Revenue	31.14%	30.06%	31.19%	30.04%	30.03%
Programming / Production Expense as % of % of Advertising Revenue	31.97%	30.98%	31.97%	30.99%	30.90%
LARGE STATIONS					
Number of stations	167	179	181	185	196
Advertising Revenue	619,069,576	664,139,865	702,190,599	732,909,909	779,078,893
Total Revenue	**625,936,724**	**673,318,299**	**716,073,707**	**743,210,359**	**789,703,528**
Operating Expenses:					
Programming/Production	146,280,780	158,831,236	168,088,614	171,158,505	184,839,101
Technical Services	18,310,490	18,772,081	18,983,005	19,764,043	20,696,700
Sales and promotion	166,917,486	172,853,139	175,148,279	182,084,527	189,816,666
Administration and general	132,966,182	137,740,411	144,215,315	147,248,579	163,402,362
Total Operating Expense	**464,474,938**	**488,196,867**	**506,435,213**	**520,255,654**	**558,754,829**
Programming / Production Expense as % of % of Operating Expense	31.49%	32.53%	33.19%	32.90%	33.08%
Programming / Production Expense as % of % of Total Revenue	23.37%	23.59%	23.47%	23.03%	23.41%
Programming / Production Expense as % of % of Advertising Revenue	23.63%	23.92%	23.94%	23.35%	23.73%

Source: Statistics Canada.

TABLE 10
Music Copyright Tariffs as a Percentage of Programming Expenditure and Revenue for Music Stations, 2002

	$000s	% of Revenue	Tariff Payments as % of Program Expense
Small Stations (Revenue < $625,000)			
Revenue	49,934	100.0	
Program Expense	17,858	35.8	
Tariff Payments			
SOCAN	1,598	3.2	
CMRRA/SODRAC	135	0.3	
NRCC (140 stations at $100 each)	14		
TOTAL	1,747	3.5%	9.8%
Medium Stations (Revenue >$625,000 < $1,250,000)			
Revenue	124,530	100.0	
Program Expense	37,394	30.0	
Tariff Payments			
SOCAN	3,985	3.2	
CMRRA/SODRAC	434	0.4	
NRCC (139 stations at $100 each)	14		
TOTAL	4,433	3.6%	11.9%
Large Stations (Revenue > $1,250,000)			
Revenue	789,704	100.0	
Program Expense	184,839	23.4	
Tariff Payments			
SOCAN	25,271	3.2	
CMRRA/SODRAC	5,338	0.7	
NRCC (196 stations)	7,863	1.0	
TOTAL	38,472	4.9%	20.8%
All Stations			
Revenue	964,168	100.0	
Program Expense	240,092	24.9	
Tariff Payments			
SOCAN	30,854	3.2	
CMRRA/SODRAC	5,907	0.6	
NRCC (196 stations)	7,891	0.8	
TOTAL	44,652	4.6%	18.6%

The total amount that broadcasters now pay to the authors, performers and makers of sound recordings for the use of sound recordings represents both a relatively small percentage of their revenue and a relatively small proportion of their programming costs. In the case of small stations, music copyright payments to all three collectives combined represent 3.5% of revenue and account for just 9.8% of total program expenses. In the case of medium size stations, such payments account for 3.6% of revenue and 11.9% of total program expense. For large stations, the combined music copyright payments represent 4.9% of revenue and 20.8% of total program expense. These figures seem remarkably low given the dependence of music format commercial stations on sound recordings as the core of their content.

Music format radio stations incur additional costs in relation to programming their recorded music content. The results of the analysis indicate that these additional expenditures related to music programming do not greatly increase the total amount.

From detailed data on a sample of 30 radio stations that responded to the NRCC interrogatories, Audley, Boyer and Stohn (2004) have estimated that other music-related expenditures would stand at 1.94% of revenue. Excluding both copyright payments and this estimate of other music related expenditures, other non-music or talk programming expenditures amount to 18.34% of revenue or $176.9 million out of total programming expenses of 24.9%, or $240.1 million, as indicated in Table 10. If all existing rights of copyright owners were exercised, no concessionary, legislated rates existed and all of the repertoire used by commercial radio stations were eligible, then music copyright payments by music format stations would rise to 9.4% of revenue, rather than 4.6% as shown in Table 10. Total programming expenditures would then be 29.7% of revenue, rather than 24.9%, as shown in Table 10. On this basis, expenditures for talk programming would represent 61.8% of programming costs (18.34% ÷ 29.68%), while music copyright and additional music-related spending would represent 38.2% of programming costs, with total programming costs amounting to $286.2 million (Table 11).

TABLE 11
Adjusted Comparison of Sound-Recording Related Expense and Other Program Expense

	$000,000	**% of Program Expense**
Sound Recording-Related Expense	109.3	38.2
Other Programming Expense	176.9	61.8
Adjusted Total Program Expense	286.2	100.0

If, in order to take into account, among other factors, the alleged market power of on-air talent, we conservatively estimate at 60% the contribution of recorded music to the ability of music stations to generate commercial revenue, the level of payment mentioned in Tables 10 and 11 for the use of recorded music requires a significant adjustment. Considering this contribution of recorded music, as well as the fact that talk, which contributes 40% of the ability of music stations to generate commercial revenue receives 18.34% of revenue or $176.9 million (Table 12), then music format stations should pay for the use of recorded music (including both music copyright payments and additional music-related expenditures) an amount corresponding to 27.5% (60/40 x 18.34) of revenue or $265.3 million. This is a prudent, conservative estimate derived from two pieces of information: first, the unavoidable self-evident assumption that CR operators are aiming to maximize the profit and value of their stations and second, the fact that they choose to spend some $176.9 million on the talk content of their program offering.

TABLE 12
Revision of Sound Recording and Other Program Content Expenditures Necessary to Provide for Equitable Remuneration for Sound Recording Use

	$000,000	**% of Program Expense**	**% of Revenues**
Sound Recording-Related Expense	265.3	60	27.5
Other Programming Expense	176.9	40	18.3
Adjusted Total Program Expense	442.2	100.0	45.8

Excluding the 1.94% of revenue allocated to music-related costs, music copyright payments would represent 25.6% of revenue, that is, a total of $247.0 million. This amount represents competitive or equitable remuneration for both the communication rights and the reproduction rights of authors/composers, performers and makers of sound recordings – assuming that the whole repertoire of each of the three groups of rights holders qualifies for payment, no concessionary tariff rates are available, and all amounts potentially owing are claimed by rights holders.

Audley, Boyer and Stohn (2004) estimated, based on earlier Copyright Board decisions, that this 25.6% could reasonably be divided between reproduction rights, accounting for 9.1%, and for communication or performing rights, accounting for 19.5%. If this percentage for communication rights is divided between the authors/composers, the performers and the makers on the basis of what they receive in the freely negotiated contractual context of new CD releases, the split would be 6.22% for the performers, 6.22% for the makers and 7.04% for the authors/composers. Since, in accordance with the Canadian *Copyright Act*, 100% of SOCAN and only 50% of NRCC repertoires qualify for payments, the three shares, as percentages of revenues, become: 3.11% for the performers, 3.11% for the makers and 7.04% for the authors/composers for a total of 13.26% or $127.8 million in 2002. If the communication rights of 19.5% were to be divided, as in previous decisions of the Board, equally between the authors/composers on the one hand and the performers and makers combined on the other hand, then, once adjustments for eligible repertoires are made, the

split would be 2.44% each for the performers and makers (a total of 4.88% to be collected by NRCC) and 9.75% for the authors/composers for a total of 14.63% or $141.0 million in 2002. The amount actually collected by NRCC would be lower, because of statutory restrictions that permitted NRCC to collect at the rate certified by the Copyright Board only on revenues of commercial radio stations that are in excess of $1.25 million. These amounts are to be compared with the total payment of $38.7 million or 4.0% of revenues paid to SOCAN ($30.9 million) and NRCC ($7.9 million) appearing in Table 10.[18]

4. CONCLUSION

All inputs or factors of production used in generating advertising revenues in the commercial radio industry, as in any other industry, should be properly compensated at a level compatible with their respective competitive equilibrium price and use (quantity) levels. If one input, such as sound recordings, is priced below its competitive equilibrium level, then that input would likely be over-utilized, and other inputs, such as direct labour and/or capital, could benefit from partially capturing that input's contribution to the value of the commercial radio operators and industry, thereby generating a socially inequitable and costly misallocation of resources.

Such misallocation of resources is apparent in the statement of the Copyright Board in its decision of October 2005, page 11: "Music is inexpensive; at most, it represents one-fifth of a station's programming expenses. Spoken word is not. On-air talent is generally well paid. News and public affairs programming is expensive to produce. This may explain why broadcasters have repeatedly asked (and obtained) from the CRTC that spoken word content requirements be reduced." This directly corroborates the analysis provided in this paper in

[18] The October 2005 decision of the Copyright Board of Canada would have raised the copyright payments of SOCAN from 3.2% to 4.2%, an increase of 31.25%, and the rate for NRCC from 1.44% to 2.1%, an increase of 46%. The NRCC increase would have reflected both a 31.25% increase, parallel to the SOCAN increase, as well as an increase in the repertoire NRCC represents. Because of a special statutory exemption clause, the NRCC would have collected at the 2.1% rate only on revenues of each commercial radio station in excess of $1.25 million. This decision was contested in Federal Court by the Canadian Association of Broadcasters on the basis that the Board had not adequately provided reasons for its decision. By order of the Court, the decision is presently being reconsidered by the Board.

two ways: sound recordings make a sizeable contribution to the profitability of CR stations and they are under-compensated.

However, one must distinguish between total cost and marginal cost of music. A zero marginal cost for using sound recordings in commercial radio is appropriate, as sound recordings are clearly information goods in the economic sense (high fixed cost and small, even zero, marginal cost). What is not appropriate is that its total cost, expressed as a percentage of revenues, should, as shown in this paper, fall so substantially short of reflecting its value to commercial radio stations.

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