

# Legal structure and strategic regulation of intellectual property : Who pays for R&D in arts markets ?

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## Introduction

The purpose of the paper is to highlight some of the effects of legal structure on the efficiency of the regulation of intellectual property rights (IPRs). The paper is mainly motivated by the regulation of IPRs in arts markets. The empirical analysis focuses on two examples of price regulation of music performance rights in the USA. However, we believe that the conclusions of the paper are not restricted to arts markets and also apply to other IPR sectors.

Identifying the optimal form of price regulation in a market where antitrust and copyright law apply simultaneously is a complex task. The central objective is to correctly balance the parallel, but usually conflicting aims of both providing producers with an incentive to undertake R&D and at the same time ensuring that as many consumers as possible are able to enjoy the fruits of R&D. In addressing this problem, some analysts have focused on how the optimality of prices change as one alters market structure (for example, Dasgupta and Stiglitz (1980) and Kamian and Schwartz (1982)). Alternatively, others have concentrated on the ability of regulators to sufficiently understand economic analysis (Korah (1994)) and/or prevent misuse of the law (Baumol and Ordover (1985)). In this paper we pursue another related trajectory of enquiry and focus our attention on the role played by legal structure. We argue that legal structure is pivotal to the

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issue of regulatory efficiency. In general, we postulate that current legal institutional form implies that welfare optimal prices are generally unobtainable and that it incites the manipulation of the law in order to reallocate the cost and benefits of R&D expenditure to favour vested interests. This also creates an incentive for international regulatory 'wars' and 'races' between countries where regulators attempt to 'lock' their own market into the lowest possible price.

The focus on intellectual property implies that the analysis will pertain to an environment where the product<sup>1</sup> is sold in more than one market and geographic region. This implies that the optimal welfare regulation of an intellectual property would require a regulator to be able to set prices across markets and national boundaries. In practice this rarely occurs. Most legal and regulatory systems are administered on a national rather than international basis so that a regulator does not actually have the power to set prices outside the national boundary. Furthermore, even within a national boundary the widespread reliance on private litigation as a means of enforcing copyright and antitrust laws implies that a court's power only extends to the set of markets in which the plaintiff and defendant both operate. This usually implies that a court has only jurisdiction over the price of the intellectual property in a single, or narrow set of markets. Similarly, a national regulator (such as the Department of Justice in the US) generally invokes its power in response to specific complaints of anti-competitive practices in a subset of markets. Again, regulatory jurisdiction is restricted. Therefore, in general legal structures are such that regulation is *sequential* – where a single or subset of relevant IPR markets are regulated one at a time – and *partial* so that the prices in all other markets are taken as given. The ramifications of this form of regulatory practice is the focus of the paper.

The paper is divided into two sections. The first provides a theoretical exposition of partial and sequential regulation in markets for intellectual property. This section provides examples of how legal structure can create incentives for the strategic manipulation of IPR laws. Section 2 examines two court decisions in an arts market, namely *Alden-Rochelle v. ASCAP* [30 F.Supp 888, p 893 (1948)] and *Twentieth Century Music Corp. v. Aiken* [422 U.S. 151, 157 (1975)]. The two rulings are chosen because they manifest sequential and partial regulation and the strategic incentives outlined in section 1. This is, of course, not to claim that these were the only influences governing the outcome of these cases. Nonetheless, it is evident from these rulings that sequential and partial regulation played a significant role in determining the courts' judgement.

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<sup>1</sup> We employ the term 'product' in the economics usage which refers to either services or physical goods.

## 1 The impact of legal institutions on markets for intellectual property

In this section we demonstrate how legal structure can affect the efficiency of price regulation. We provide theoretical examples of IPR markets where R&D costs are necessary in order to cause the creation of new artistic works. In order to demonstrate the role of sequential and partial regulation, and in turn the resulting strategic incentives, we initially present a model of a single nation world and then gradually alter it to account for legal structural realities. Therefore, we commence with an outline of a simple example where a global regulator regulates the price of a particular IPR sold in a single market. This is then extended to consider multiple markets for a single IPR where the regulator maximises welfare by simultaneously setting prices across all of the IPR's markets. We then introduce the influence of legal structure. Firstly we consider a world regulator who regulates price on a sequential, market by market, basis employing partial price regulation. We then consider a form of regulation where world regulation is divided into national regulators; each trying to maximise the welfare of its own citizens.

### Example 1 *A Single Regulator and Market for IP*

We use a two period model. Suppose that there is a single firm considering investment in *R&D* at time  $t - 1$  in order to create a new technology,  $T$ , necessary to produce an artistic product in time period  $t$ . Suppose also that the commercial value of the product is zero in time periods beyond  $t$ . Let  $F_{t-1}$  denote the necessary and sufficient level of expenditure on *R&D* in order to allow a given probability  $ve[0, 1]$  of creating  $T$ . We assume that the price of the subsequent output ( $P_t$ ) is decreasing in the quantity of output ( $q_t$ ) and that the cost function ( $c_t$ ) is increasing in ( $q_t$ ). Suppose also that a regulator sets a price ceiling which is less than or equal to the monopoly price. Therefore, the firm is faced by a discrete choice to either undertake R&D and produce the profit maximising level of output given the regulated price, or not undertake R&D and refrain from production. Assuming risk neutrality and no discounting, the expected profit function at time  $t - 1$  is defined

$$H = \prod_{t-1} + \prod_t = vp_t q_t(p_t) - vc_t(p_t) - F_{t-1} \quad (1)$$

We assume that the regulator sets price with the objective of maximising economic welfare. Specifically, in period  $t - 1$  the regulator announces a price ceiling  $P_t^*$  for period  $t$ . We assume that this decision is binding in period  $t$ . This might reflect a situation where a regulator's role is to generate the lowest price possible for consumers without causing R&D to collapse. In this scenario the regulator will only be able to ensure ongoing R&D expenditure across an immense range of IPR products if it is not seen to renege

on its pricing policy. Thus, the forgoing results are, therefore, independent of potential time-inconsistency in regulatory pricing behaviour<sup>2</sup>.

Assuming that the firm uses best practice techniques of production,  $P^*_t$  must satisfy a zero risk adjusted profit constraint,  $H = 0$ , so that

$$P^*_t = \frac{\left(c_t + \frac{F_{t-1}}{v}\right)}{q_t} \tag{2}$$

Therefore, if  $F_{t-1}/v$  is positive then a price cost mark-up (allocative inefficiency) must occur for non-decreasing returns to scale. If  $\frac{F_{t-1}}{v}$  is sufficiently large<sup>3</sup>, allocative inefficiency may also occur for decreasing returns to scale. In general, the level of allocative inefficiency is non-decreasing in  $F_{t-1}/v$ .

**Example 2** *Single Simultaneous Regulation of Multiple Markets for IP*

Now we consider the case where technology  $T$  has an application in multiple markets (for example, the same music composition being sold in distinct geographical markets or in differing product markets within a given region). Suppose the technology is applied in two markets which we denote as  $i$  and  $j$ . We also assume that there are zero cross-price elasticities, and in the case of an identical product being sold in distinct geographical regions, no trade between these markets<sup>4</sup>. The regulator’s task is, therefore, to choose prices  $P^*_{it}$  and  $P^*_{jt}$  so as to maximise economic welfare ( $W$ , the sum of firm profits,  $H$  and consumers’ surplus,  $S$ ). Therefore, the regulator optimises the Lagrangian function

$$L = H_{it} + S_{it} + H_{jt} + S_{jt} - F_{t-1} + \lambda[H_{it} + H_{jt} - F_{t-1}] \tag{3}$$

Welfare optimisation of (3) implies that regulatory prices are negatively related to the initial looseness of the profit constraint.

**Example 3** *Single Sequential Regulation of Multiple Markets for IP*

We now begin to consider the role of legal structure. Suppose that the regulator does not simultaneously choose  $P_{it}$  and  $P_{jt}$  but chooses each sequentially taking the price level in the other market as fixed. In effect, this

<sup>2</sup> If  $P^*_t$  is greater than marginal cost then there is the presence of time inconsistency in policy making. In other words, the regulator has an incentive to announce  $P^*_t$  at time  $t - 1$  so that the firm undertakes the necessary expenditure on R&D but then subsequently sets price equal to marginal cost when period  $t$  arrives. Although the firm would incur losses this would maximise economic welfare across both time periods. Over a longer time horizon such activity will eliminate investment in R&D and hence be sub-optimal.

<sup>3</sup> Defined as

$$\frac{F_{t-1}}{v} > p(\hat{q}_t) - \int_0^{\hat{q}_t} \frac{\partial c_t}{\partial q_t} dq_t ; \quad p(\hat{q}_t) = \frac{\partial c_t}{\partial q_t} |_{q_t = \hat{q}_t}$$

<sup>4</sup> The latter assumption is a reflection of the impact of national copyright laws on the international trade of intellectual property.

is what happens in cases of litigation and industrial regulation where rulings are derived and applied on an individual market basis. To illustrate, assume that a regulator now administers the price in market  $j$  only. Therefore, the firm will charge the monopoly price ( $P_{it}^m$ ) and derive monopoly profits  $H_{it}^m(P_{it}^m)$  not less than  $H_{it}(P_{it}^*(Y_{it}^*))$  in market  $i$ . There are three possibilities.

In case 1,  $H_{it}^m = H_{it}(P_{it}^*)$  where the regulator sets price  $P_{jt}^*(Y_{jt}^*)$  and partial regulation derives identical economic welfare as simultaneous regulation. Therefore, in this instance economic welfare is identical whether the regulator acts sequentially or simultaneously.

Alternatively,  $H_{it}^m > H_{it}(P_{it}^*)$  with two possible outcomes. The first (case 2),  $P_{jt}^* > c'(q_{jt})$  at  $q_{jt}^*$ , and so price must fall to  $P_{jt}^{**} < P_{jt}^*$  and consumer surplus must rise to  $S_{jt}(P_{jt}^{**})$ . If the regulator, were then to administer the price in market  $i$ , it would allow the firm to charge the monopoly price if  $H_{it}^m(P_{it}^m)$  is the only profit in market  $i$  that will satisfy  $H_{it} = F_{it} - H_{jt}(P_{jt}^{**})$ . Otherwise,  $P_{it}$  is set at  $P_{it}^{**}$  defined  $P_{it}^* < P_{it}^{**} < P_{it}^m$ . These prices in markets  $i$  and  $j$  are then the equilibrium set of regulatory prices as subsequent sequential regulation of either market will not generate new prices. Furthermore, the level of economic welfare is less than simultaneous regulation and case 1.

In the second instance, (case 3),  $P_{jt}^* = c'(q_{jt})$  at  $q_{jt}^*$  and then the regulator leaves  $P_{jt}$  and  $S_{jt}$  unchanged. However, this is not necessarily a regulatory equilibrium as subsequent regulation of market  $i$  may result in a reduction in  $P_{it}$ . However, this will then establish a regulatory price equilibrium which will have inferior economic welfare if the same set of markets were regulated simultaneously. Together, cases 1 to 3 indicate that a single sequence of partial regulation across all markets is sufficient to create a sequential regulatory price equilibrium.

**Proposition 1** *a single sequence of partial regulation across all markets will establish an equilibrium set of regulatory prices. These prices will generate an aggregate level of economic welfare which is either inferior or equal to that attainable under the simultaneous regulation of prices.*

It is also the case that consumers are either better off, or at least as well off from being in a market that is regulated earlier, rather than later in a sequence. Namely, the onus of covering  $F_{t-1}$  through profits for each market is monotonically increasing in the order of market regulation.

**Proposition 2** *Consumers in a particular market are either better off or no worse off when their market is regulated earlier rather than later in a sequence of market regulation.*

It follows from proposition 1 that the creation of additional markets for technology  $T$  (for example, new multi-media products containing music, film and literature IPRs) may create a regulatory price disequilibrium. If an unexpected market  $k$  occurs then through subsequent price regulation

profit  $H_{kt}(P_{kt})$  will be set to zero for non-decreasing returns to scale and the original regulatory price equilibrium vector does not change. However, with decreasing returns to scale,  $P_{kt}$  set equal to marginal cost can generate a profit hence requiring a new sequence of regulation to attain a new regulatory price equilibrium. Thus, consumers in unexpected markets benefit at the expense of those in anticipated markets because the regulator would have set prices in the latter in order to fully cover  $F_{t-1}$ .

**Proposition 3** *If prior to the occurrence of an unexpected market for an IPR a regulatory price equilibrium existed then consumers in existing regulated markets can only benefit from the arrival of this new market if its production technology exhibits decreasing returns to scale.*

We have established that a single sequence of regulation across all markets is sufficient (though not always necessary as in cases 1 and 2) to establish a regulatory price equilibrium. In the example, there are two possible sequences comprising  $i$  first and then  $j$ , or vice versa. We now demonstrate that it is possible that the order of the regulatory sequence may affect economic welfare. For example, suppose that the functions  $P_{it}$  and  $P_{jt}$  are defined

$$P_{it} = A - aq_{it} \quad ; \quad A, a > 0 \quad (4)$$

$$P_{jt} = B - bq_{jt} \quad ; \quad B, b > 0 \quad (5)$$

The firm's gross (operating) profit function for market  $i$  is therefore

$$H_{it} = Aq_{it} - aq_{it}^2 - cq_{it} \quad (6)$$

so that monopoly output is defined

$$q_{it}^m = \frac{(A - c)}{2a} \quad (7)$$

Substituting  $q_{it}^m$  into (6) defines monopoly profits ( $H_{it}^m$ ) which due to the linearity of the demand function are exactly half of the perfectly competitive level of economic welfare ( $W_{it}^c$ ) and double the monopoly consumer surplus ( $S_{it}^m$ ).

$$H_{it}^m = \frac{(c - A)^2}{4a} \quad (8)$$

$$W_{it}^c = \frac{(c - A)^2}{2a} \quad (9)$$

$$S_{it}^m = \frac{(c - A)^2}{8a} \quad (10)$$

Substituting  $B$  for  $A$ , and  $b$  for  $a$  in equations (6) through to (10) derives the corresponding values for  $q_{jt}$ . For convenience suppose  $F_{t-1} =$

$H_{jt}^m < H_{it}^m$ . We now examine the two possible sequences of regulation. The regulation of market  $i$  first implies that the firm secures monopoly profits in market  $j$  and that the regulator takes this as given. Since profits in market  $j$  are sufficient to cover  $F_{t-1}$  it follows that the regulator sets  $P_{jt}$  at the perfectly competitive level. The same procedure occurs when market  $j$  is first in the sequence of regulation. Therefore, welfare from regulation in the order  $ij$  and  $ji$  are defined by equations (11) and (12) respectively.

$$W^{ij} = \frac{(c - A)^2}{2a} + \frac{3(c - B)^2}{8b} \tag{11}$$

$$W^{ji} = \frac{(c - A)^2}{8a} + \frac{(c - B)^2}{2b} \tag{12}$$

$$W^{ij} - W^{ji} = \frac{(c - A)^2}{8a} - \frac{(c - B)^2}{8b} > 0 \tag{13}$$

Since  $H_{jt}^m < H_{it}^m$ , equation (13) is positive and, therefore, the regulatory sequence  $ij$  is welfare superior to  $ji$ .

**Proposition 4** *the ordering of the sequence of price regulation across markets can affect economic welfare. Variations in sequence history can cause permanent differences in economic welfare both in terms of its aggregate level and distribution across both markets. When costs are symmetric across markets, the welfare maximising sequence implies regulating the more profitable markets first.*

Proposition 4 provides some guidance on how a regulator with limited resources or with positive regulation costs can optimise the allocation of regulatory resources.

**Example 4** *Independent Sequential Regulation of Multiple Markets for IP*

Up to now we have assumed that regulation seeks to maximise welfare across all markets. From an economics perspective, we would like to think that consistent regulation would achieve this outcome. Events such as the international regulatory disputes between the US Federal Trade Commission and the EU Commission over the merger of the aircraft manufacturers Boeing and McDonnell Douglas<sup>5</sup> and Mueller’s (1996) survey of political influence in US regulatory history may suggest that this would be a naive view to hold. Our analysis is consistent with the view that national regulatory institutions may attempt to maximise national rather than global economic

<sup>5</sup> The Economist (1997) argued that there was no way of reconciling the US’s pro merger view with the EU anti merger perspective within the confines of competition policy objectives.

“Yet none of this [national legal systems] explains how the two regulators could reach such opposing conclusions. The market was the same worldwide one for large civil aircraft. The competition issues should have been relatively clear-cut. But the lethal cocktail of politics, national champions and defence interests ensured it turned into a blurred, politicised mess.” [p. 78]

Table 1

	$P_{jt}^m$	$P_{jt}^*$	$P_{jt}^c$
$P_{it}^m$	$(W_{it}^m + H_{jt}^m, S_{jt}^m)$	$(W_{it}^m + H_{jt}^*, S_{jt}^*)$	$(W_{it}^m + H_{jt}^c, S_{jt}^c)$
$P_{it}^*$	$(W_{it}^* + H_{jt}^m, S_{jt}^m)$	$(W_{it}^* + H_{jt}^*, S_{jt}^*)$	$(0, 0)$
$P_{it}^c$	$(W_{it}^c + H_{jt}^m, S_{jt}^m)$	$(0, 0)$	$(0, 0)$

welfare and do so at a welfare cost to other countries. This may give rise to international regulation 'races' or indeed, 'wars'. We illustrate this point with some simple game theory.

Let us assume that markets  $i$  and  $j$  are located in separate countries with independent regulators  $I$  and  $J$ . Since markets  $i$  and  $j$  will only exist if  $T$  is developed, both countries receive zero economic welfare from these markets if the firm's international profits are insufficient to invest in  $R\&D$ . Therefore, each regulator must balance the benefits of lower prices for its consumers against the likelihood that technology  $T$  will not be developed. In this instance, consumers benefit from being regulated first. Therefore, in the sequence  $ij$  regulator  $I$  can take the existence of monopoly profit in market  $j$  as given and then set  $P_{it}$  at the lowest level necessary to ensure that  $T$  is produced. In effect it can push the costs of innovation on to country  $j$  and maximise the benefits of the innovation by charging a low price in country  $i$ . In this sense there is a regulatory first mover welfare advantage.

To illustrate this point let us assume that the characteristics of the markets in countries  $i$  and  $j$  are as defined by the equivalent of equations (4) to (13). For expositional ease, suppose that the regulator in each country can set one of three prices which range between marginal cost and monopoly pricing. Specifically, we assume that they may set either a monopoly price  $P^m$ , a marginal cost price  $P^c$ , or a simultaneous global welfare optimal price  $P^*$ . In general, this is reasonably representative of the range of feasible regulatory prices. The regulatory price must be justified with reference to some economic rationale which constrains price within a range from marginal cost pricing to a monopoly price. Without loss of generality, we will assume that the firm is owned by the residents in country  $i$ . For expositional ease we will present the payoffs in table 1 in simultaneous play form even though we discuss sequential play. To make the following interesting we will suppose that both markets are identical and monopoly profits in each market are equal to the total profit levels necessary to stimulate investment in  $R\&D$ . Therefore, marginal cost pricing in one market would necessitate monopoly pricing in the remaining market in order to ensure that  $R\&D$  investment occurs.

There are three Nash equilibria in table 1 representing the pricing strategies  $(P_{it}^m, P_{jt}^c)$ ,  $(P_{it}^*, P_{jt}^*)$  and  $(P_{it}^c, P_{jt}^m)$ . However, with sequential play a first mover has a dominant strategy to choose marginal cost pricing. This implies two 'leader-follower' regulatory price equilibria of marginal cost

Table 2

	$P_{jt}^m$	$P_{jt}^*$	$P_{jt}^c$
$P_{it}^m$	$(W_{it}^m + H_{jt}^m + M_i, S_{jt}^m)$	$(W_{it}^m + H_{jt}^* + M_i, S_{jt}^*)$	$(W_{it}^m + H_{jt}^c + M_i, S_{jt}^c)$
$P_{it}^*$	$(W_{it}^* + H_{jt}^m - L_i, S_{jt}^m)$	$(W_{it}^* + H_{jt}^* + L_i, S_{jt}^*)$	$(L_i, 0)$
$P_{it}^c$	$(W_{it}^c + H_{jt}^m + C_i, S_{jt}^m)$	$(C_i, 0)$	$(C_i, 0)$

and monopoly pricing respectively. In other words, the first mover is able to capture the main benefits of the technology while forcing the follower to pay monopolistic prices.

This system of play is unaffected by the location of ownership of the firm producing for markets  $i$  and  $j$ . The inclusion of firm profits,  $H$ , as a component of the welfare of country  $i$  does not change either the Nash equilibria nor the two unique sequential equilibria. The only effect is to increase the size of the payoff to country  $i$  from setting prices equal to marginal cost. In other words, a regulator with a first mover advantage might, all things being equal, be expected to prioritise the regulation of those markets where domestic firms dominate world markets.

As we know, regulatory decisions in one market set a precedent for the form of regulation that may occur in other markets. Thus, where salient market features are similar across two markets common regulatory principles usually apply. If not, a ruling can be validly challenged so that at least one is unsustainable and a single ruling dominates. This implies that regulatory history matters and that there are significant switching costs associated with changes in regulation strategies. In game theoretic terms this implies that in repeated games, regulators are forced to adopt pure strategies. We can augment table 1 to allow for this effect. Suppose that country  $i$  has a regulatory history which implies that switching costs are involved in choosing a strategy in this once-off game. In table 2 these are denoted as lump sum switching costs  $M_i, L_i, C_i$  for choosing monopoly, simultaneous, and marginal cost regulatory prices respectively. Regulatory history changes the possible equilibria. For example, if country  $i$  had adopted a marginal cost pricing strategy in markets similar to the market in table 1 then  $M_i < L_i < C_i = 0$ . As before, the regulator in country  $i$  would choose marginal cost pricing if it had the first move. However, if  $W_{it}^m + H_{jt}^m + M_i < 0$  (for example, if a significant level of marginal cost price regulation existed in related markets) then the pair of strategies  $(P_{it}^m, P_{jt}^c)$  are no longer a Nash equilibria *even* when regulator  $I$  is the follower. In the knowledge that regulator  $I$  has a history of marginal cost pricing, regulator  $J$  realises that regulator  $I$  will never set monopoly prices, even when the market collapses. In this case, regulator  $J$  is forced to set  $P_{jt}^*$  or even  $P_{jt}^c$  depending on the extent to which regulator  $I$  is locked-in to a pure strategy.

Other permutations are possible but they lead in the same general direction. Namely, if a regulator can get a 'head start' and lock itself into

marginal cost pricing in a significant number of markets it will tend to force other regulators to adopt more monopolistic prices; even when the latter are subsequently first movers. Thus, in this sense a national regulator might be expected to regulate as fast and extensively as possible in order to lock itself into 'low' regulatory prices.

## 2 US Regulation in a Market for Intellectual Property : Music Compositions

In this section we illustrate two examples where the strategic incentives outlined in section 1 have played a key role in determining the regulation of IPRs. Therefore, we choose two rulings from the USA's market for music performance rights, namely *Alden-Rochelle v. ASCAP* [30 F.Supp 888, p 893 (1948)] and *Twentieth Century Music Corp. v. Aiken* [422 U.S. 151, 157 (1975)]. The cases are chosen because they deal with the core of the topic of the paper, namely the question "who pays for R&D in Arts markets". They illustrate partial and sequential regulation, and international markets where to varying degrees non-US consumers pay for music while their US counterparts acquire it for free. In the remainder of the section we initially describe the nature of the market for music compositions and then examine each case in turn.

### 2.1 The market for music composers' performance rights in the USA

A musical composition entails two main sets of rights, namely performance and mechanical rights<sup>6</sup>. The performance right relates to the right to perform music in public. It refers to media such as broadcasting, live concerts and public performance of recorded music. The mechanical right refers to the use of music in audio software such as compact discs and cassettes. Thus, the potential revenue of any musical composition will depend on its combined utilisation across these markets in each country. Therefore, as in examples 2-4 of the model in section 1, the global welfare optimal set of prices entails setting prices across many product markets and across many nations. As we will observe, this does not occur on either dimension. In general, each product market is regulated in relative isolation so that the state of competition in remaining markets is taken as given. Therefore, the legal structure reflects that outlined in the model of section 1 in that it is partial (as it takes prices in all other markets for the same IPRs in the

<sup>6</sup> There is also a synchronization right which relates to the right of a composer to choose whether or not a film producer may use her music score in a film. In the USA the synchronization right and the music performance right are licensed simultaneously to the film producer. In the European Union, they are licensed separately.

USA and the rest of the World as given) and sequential (some of these markets are regulated before others). Also the licensing of intellectual property across international markets usually implies that any given product market extends beyond the geographic realm of any individual national regulator. Therefore, one would imagine that the analysis of example 4 in section 1 might apply when global and national interests may be in conflict with one another.

Musical compositions entail many of the features of public goods. They are non-diminishable and are often non-excludable. Therefore, the creation of intellectual property rights was partly motivated by the desire to mitigate against market failure. The non physical nature of musical compositions implies that performing rights are extremely difficult for a supplier to control. In particular, it is difficult to monitor usage and prevent unauthorised use. On this basis it is highly costly for each composer to individually licence music to each consumer. To overcome these problems composers have co-operated with one another to licence their music collectively. This entails either the creation of a society (of composers and publishers), or the initiative of an independent firm which acts as a licensing agent on behalf of a group of composers. With a large repertoire of musical compositions, collective licensors are then able to reap economies of scale across a range of activities. In particular, in policing and monitoring music use, formulating blanket licensing agreements, instigating legal action against the violation of rights, and remunerating composers for the use of their music. The extent of these decreasing costs have generally been sufficient to acquire the approval of collective licensing by most national regulatory authorities<sup>7</sup>.

In practice, most of the collective licensors are societies rather than independent agents. Members are comprised of the owners of the performance right, namely composers and music publishers. The most common form of licence is known as a blanket licence where the licensee acquires the right to use any (and usually as much) of the entire repertoire of the collective society's music. In practice this usually amounts to the entire world's supply of music as each society forms international reciprocal agreements with other societies to license each other's music in the respective markets. This form of international trade in musical performance rights then results in flows of revenues between societies. Less frequently collective societies offer other forms of licenses such as per event licenses (for individual live performances), per program licences (for the broadcast of a particular program) and per piece licences (for an individual music title).

The market for music performance rights in the USA is unique to the extent that it departs from the more usual scenario where a single collective licensor supplies the entire market. In fact, three collective licensors operate in the USA. The American Society of Composers, Authors and Publishers (ASCAP) is the largest and oldest firm. It was founded in 1914.

<sup>7</sup> The Canadian regulatory authorities actually encouraged the merger of a number of collective societies into a single monopoly (SOCAN) in order to reap productive efficiency gains.

ASCAP is a membership society comprised of composers and publishers who assign performance rights to ASCAP, and who in turn offers licences to users. Broadcast Music Incorporated (BMI) is ASCAP's main rival and this company is owned by broadcasters. It was founded in response to disputes with ASCAP over pricing in the 1930s. Broadcasters also promoted BMI by agreeing a ban on the use of ASCAP repertoire by radio stations. Therefore, a significant number of composers and publishers found it in their interests to licence music through BMI.

The Society of European Stage Authors and Composers (SESAC) is the third competitor in this market. SESAC is the second oldest society. It was founded in 1931 by a former publisher member of ASCAP. It has remained privately owned and like BMI has affiliates rather than members. Between 1992 and 1996, ASCAP's revenue has varied between \$280 million (1992) and \$411 million (1996) while over the same period BMI's revenue has varied between 75 and 85 per cent of ASCAP's revenue<sup>8</sup>. Both receive approximately a quarter of their income from the use of their members' (ASCAP) or affiliates' (BMI) music in markets outside the USA<sup>9</sup>. SESAC is much smaller with an income in the region of \$10 million<sup>10</sup>.

US regulators force both ASCAP and BMI to conduct their business within the confines of US Department of Justice Consent Decrees which seek to restrain their market power. The extent to which SESAC provides credible competition is not within the scope of this paper. However, the US regulatory authorities do not subject SESAC to adhere to a Consent Decree and this may imply that they do not believe that SESAC has significant market power.

The music performance right was originally established by the US Copyright Act of 1897. The Congressional motivation for music copyright (see the Congress's justification for the 1909 Copyright Act below) was to provide an incentive for composers to compose music but at the same time to ensure that they charged the lowest possible price consistent with this objective. Thus, the regulator's task reflects the constrained optimisation of welfare outlined in the model of section 1.

The main object to be desired in expanding copyright protection accorded to music has been to give to the composer an adequate return for the value of [422 U.S. 151, 164] his composition, and it has been a serious and a difficult task to combine the protection of the composer with the protection of the public, and to so frame an act that it would accomplish the double purpose of securing to the composer an adequate return for all use made of his composition and at the same time prevent the formation of oppressive monopolies, which might be

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<sup>8</sup> MBI (1997)

<sup>9</sup> MBI (1997)

<sup>10</sup> Korman (1995)

founded upon the very rights granted to the composer for the purpose of protecting his interests<sup>11</sup>.

US antitrust and copyright laws operate through three institutional channels. Firstly, intermediate consumers (such as pubs, restaurants and hotels who use music as an input to their business) may seek civil action which invokes copyright and/or antitrust laws. In the second instance, the US Government may initiate suits against licensors. Finally, the US Department of Justice may regulate licensors through Consent Decrees. The market for music performance rights has incurred all three forms of regulation. However, as in other countries, the limited resources available to state regulatory bodies imply that actual regulation relies to a significant extent on private initiative (litigation) to invoke antitrust and copyright laws. Given coordination and free rider problems, it is probably not too surprising to find that most litigation is undertaken by organised groups of consumers and therefore, by firms who use music as an input to their business rather than final users of music.

## 2.2 The Alden-Rochelle ruling

This case arose as a result of private litigation instigated by cinema owners who contested the validity of ASCAP's performance rights for music in film. In its ruling, *Alden-Rochelle v. ASCAP* [30 F.Supp 888 (1948), 80 F.Supp (1948)], the Court effectively used antitrust law to merge the point of sale of two property rights. The case was caused by an attempt by ASCAP to increase the royalties paid by cinema owners by amounts ranging from 200 to 1500 per cent. The cinema owners challenged these increases on the basis that they constituted a breach of antitrust law and the Court concurred. The Court took the view that collective licensing expanded the existing monopoly power of copyright by introducing scope for abuse through the monopolisation of the supply of musical performance rights.

Almost every part of the Ascaph structure, almost all of Ascaph's activities in licensing motion picture theatres, involve a violation of the anti-trust laws. Although each member of Ascaph is granted by the copyright law a monopoly in the copyrighted work, it is unlawful for owners of copyrighted works to combine their copyrights by any agreement or arrangement, even if it is for the purpose of thereby better preserving their property rights<sup>12</sup>.

Thus, the Court viewed ASCAP as a copyright owners' (i.e. composers and publishers to whom they assign rights) cartel. The Court's allegation of collusion also implicated motion picture producers who owned a considerable portion of music performance publishing rights. The Court found that motion picture producers promulgated price fixing by stipulating the requi-

<sup>11</sup> H.R. Rep. No. 2222, 60th Cong., 2nd Sess., 7(1909).

<sup>12</sup> *Alden-Rochelle v. ASCAP* [30 F.Supp 888, p 893]

rement of a mandatory ASCAP licence as a pre-condition for a distribution arrangement with each cinema<sup>13</sup>.

Despite recognising film producers' dominant position in the market, the Court decided that since film producers successfully secured synchronization rights (the right to use a composition in a specific film) from composers (through the Harry Fox Agency), it would be more efficient for them to also secure the performance rights at the same time. In the case where film producers commissioned music from composers who were not members of ASCAP, this did in fact occur. Therefore, the Court did not perceive any technical impediment to such an arrangement being extended to all composers.

Unquestionably it would be simpler and a proper arrangement for the owner of the copyright to deal directly with the producer on both the synchronisation rights and the performing rights, and thus have the motion picture producer acquire both rights at the same time... But that in some way the value of the performing rights would be claimed by the copyright owner and eventually would be passed on to the exhibitor, I have no doubt at all<sup>14</sup>.

For our purposes, there are two points of interest from this ruling. Firstly, the ruling reflects examples 3 and 4 of the model of section 1, in that the judgement is facilitated by the incentives created by partial and sequential regulation - proposition 2. The US court had only jurisdiction over music performance licences for cinemas in the US. Thus, it had to take the price for music performance licences in cinemas outside the USA as given. In this sense, the strategic incentives of partial and sequential regulation existed. Namely, the Court could take non-US cinema music performance royalty revenue as given and decide on this basis whether the additional revenue generated within the US cinema market for music performances was excessive (example 4). In fact, this is what the court found. Its main concern was that ASCAP - on behalf of composers and publishers - was charging excessive prices. As a result, it took measures which it hoped would enhance the welfare of US consumers without threatening the innovativeness of the market for composers. If the ruling achieved the Court's objective, then regulation in other markets for music compositions face a more binding profit constraint<sup>15</sup>. Thus, in line with both proposition 2 and example 4, it

<sup>13</sup> The Court found that "The arrangement by which the producers consent that there be specifically reserved to Ascaph the right to license the performing rights, is supplemented by a provision in the contract between the distributor of the motion pictures and the exhibitors which limits the public exhibition of the film for profit to theatres which have an Ascaph licence. The producers and Ascaph's members thus combine the monopoly of the copyright of the motion picture with the monopoly of the copyright of the musical compositions, which constitutes an unlawful extension of the statutory monopoly of each and violates anti-trust laws, as a combination in restraint of trade." [*Alden Rochelle v. ASCAP* [80 F.Supp. p894]].

<sup>14</sup> *Alden-Rochelle v. ASCAP* [30 F.Supp 888, p 896]

<sup>15</sup> However, it is not clear that the *Alden-Rochelle* ruling necessarily achieves the aim of increasing price competition among composers. Composers would be expected to demand more upfront payments in light of the fact that they no longer have potential music performance rights income from ASCAP. In this instance, and as long as the ruling does not change composers' bargaining power, one might imagine that their income

follows that lower regulatory prices in the US restrict the scope for similar regulatory prices for the same IPRs in foreign markets.

In the second instance, the Court ruled that the state of technology dictated that it was both feasible and cost effective for both rights to be licensed in the same transaction. Initially, in the early years of the film industry this was not the case. At that time movies had no sound and were usually accompanied by live performances of music by one or more musicians in the cinema. With the arrival of 'talkies' in the late 1920s and early 1930s, synchronized music was included with the film so that the provision of music by cinemas was unnecessary. In the Court's view, it was this technological development - the capability to licence synchronization and performance rights for film simultaneously - which created scope for a welfare improvement. Regardless of whether or not it has actually resulted in any welfare improvement, it is interesting to note that it took regulators a period of approximately 20 years before they took action to exploit, what was in their eyes, an opportunity to enhance welfare. In other words, if one were to accept that the ruling was optimal from a welfare perspective, then one observes a fairly laggard response by regulators when exploiting this welfare opportunity. In effect, overreliance on private litigation to exploit potential welfare gains appears to be a slow means of propagating welfare improvements. This, is in fact one of the likely causes of the incentives for strategic regulation outlined in section 1, namely that slack regulatory action in one market for an IPR creates the opportunity for regulatory first mover advantages in other markets for the same IPRs. In other words, the equilibrium conditions of proposition 1 have not been achieved and hence the strategic incentives of proposition 2 exist.

### 2.3 The Aiken Exemption

In the case of *Buck v. Jewell-La Salle Realty Co.* [283 U.S. 191] the Court found that a hotelier who relayed radio broadcasts to guests in their bedrooms was deemed to have utilised a music 'performance' under the Copyright Act and hence was liable to pay a licence fee. However, in *Twentieth Century Music Corp. v. Aiken* [422 US 151 (1975)] this precedent was

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is unaffected by the Court's ruling. However, the purpose behind the Court's decision was precisely to reduce composers' market power. Namely, composers were compelled to form individual independent licensing agreements with film producers thereby eroding scope for price collusion through ASCAP. Moreover, the effect of the ruling was to force them to sell to a concentrated market (to oligopolistic film studios) where buyers are likely to have monopsony power. Therefore, the effect of the regulation is to either reduce (the Court's intended purpose) or at the very least leave unchanged the price of film score compositions. Only if the *Alden-Fachelle* ruling has succeeded in its objective of reducing the income of composers does it effectively entail a strategic regulatory effect which tightens the profit constraint and to this extent, restricts the scope for lower regulatory prices in other markets. In other words, if composers' income falls as a result of the ruling, it follows that US cinema consumers are better off (due to a lower overall payment to composers and the reduction of price distortion due to a move from per unit to lump sum payment) while non-US consumers now pay a greater proportion of the film soundtrack R&D costs while at the same time have reduced scope to lower the price they pay through recourse to regulatory intervention.

overturned. The basis for the Court's decision reflects propositions 2 and 3, namely that when a regulatory price disequilibrium exists, there is scope to reduce the regulatory price and enhance welfare. In other words, the court believed that creators of intellectual property were being overcompensated and hence there was some scope to reduce the price of their IPRs. Thus, in *Twentieth Century Music Corp. v. Aiken* the Court absolved a fast food restaurant of an obligation to pay for a licence both because the Court ruled that relaying music to customers via radio did not constitute a 'performance' and because in the Court's view composers had been adequately remunerated for their creativity in other markets. The Court found that technological developments which led to new uses of music did not automatically create new property rights. Thus, the courts view reflects propositions 2 and 3 where the creation of a new market for an IPR and hence a new revenue stream may cause a regulatory price disequilibrium and hence create scope for strategic regulation. The Court held that copyright was only justified if remuneration was necessary in order to incite composers to produce music which ultimately benefits the public. On behalf of the Court, Justice Stewart stated

The immediate effect of our copyright law is to secure a fair return for an "author's" creative labor. But the ultimate aim is, by this incentive, to stimulate artistic creativity for the general public good. "The sole interest of the United States and the primary object in conferring the monopoly", this Court has said, "lie in the general benefits derived by the public from the labors of authors". *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127. See *Kendall v. Windsor*, 21 How. 322, 327-328; *Grant v. Raymond*, 6 Pet. 218, 241-242. When technological change has rendered its literal terms ambiguous, the Copyright Act must be construed in light of this basic purpose<sup>16</sup>.

The Court found that the remuneration for the public performance of music by restaurants similar to "George Aiken's Chicken" was not justified as composers were sufficiently remunerated in other markets and the proposed licensing of such outlets was impractical.

...to hold that [422 U.S. 151, 163] all in Aiken's position "performed" these musical compositions would be to authorize the sale of an untold number of licenses for what is basically a single public rendition of a copyrighted work. The exaction of such multiple tribute would go far beyond what is required for the economic protection of copyright owners and would be wholly at odds with the balanced congressional purpose behind 17 U.S.C. 1(c)<sup>17</sup>.

The ruling was also innovative because it overruled the copyright owner's right to remuneration even though the user was profiting from the use of the intellectual property. The restaurant had installed four speakers in the restaurant so that it could be heard by customers. The Court acknowledged

<sup>16</sup> *Twentieth Century Music Corp. v. Aiken* [422 U.S. 151, 157 (1975)].

<sup>17</sup> *Twentieth Century Music Corp. v. Aiken* [422 U.S. 151 (1975)]

that this was motivated by commercial considerations. However, the Court held that the remuneration for such performance rights went beyond the original intention of the 1909 Copyright Act and would result in excessive remuneration for composers.

The *Aiken* ruling required new copyright law and gave rise to the 1976 Copyright Act which through Section 110 permitted a series of exemptions. Thus, again regulatory activity required stimulation from private litigation, thereby creating sequential regulation and the resulting strategic incentives outlined in proposition 2. The Act overruled the Court's opinion that playing music by radio in a commercial outlet was not a 'performance'. It, therefore, re-instated the earlier ruling of *Buck v. Jewell-La Salle Realty Co.* [283 U.S. 191]. However, it endorsed the Court's ruling in relation to regulatory pricing and through the Section 110 exemptions, went further. Some of these are based on non-profit, educational or charitable oriented performances. However, exemption 110(5) is purely commercial and exempts performances conducted through "the transmission on a single receiving apparatus of a kind commonly used in private homes" in retail outlets. The exemption does not apply if there is further re-transmission or a direct charge to hear the performance. In creating the exemption the US Congress in effect set an 'optimal' zero regulatory price for music performances in smaller sized retail units.

Given the international welfare effects outlined in example 4 and proposition 4 of section 1, and the fact that in the EU retail outlets pay significant sums for music performance licences, it is probably not too surprising that the EU Commission is currently challenging the legality of the US Section 110(5) exemption on copyright through the World Trade Organisation (WTO). This follows a complaint from European composers and publishers<sup>18</sup> that the US exemption acted as an impediment to international trade and detrimentally affected their income. The legality of the US exemption is being challenged on the basis that it does not comply with Article 11 of the Berne Convention which assigns authors of literary and artistic rights the exclusive right of authorising public performances of their works. The claim is that Article 9 of the TRIPS Agreement compels WTO members to adhere to the rules of the Berne Convention. The European Commission's announcement of this initiative in their Official Journal makes clear that they are concerned by the strategic nature of the US exemption and of the dangers that such initiatives may be employed by other countries.

Furthermore, given the allegedly unique character of the US trade practices challenged, it is in the interests of the Community to examine whether such practices constitute a dangerous precedent and

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<sup>18</sup> The formal complaint was lodged by the Irish society, the Irish Music Rights Organisation (IMRO), and was supported by the remaining European Union composer societies through Gesac – *Groupement européen des sociétés d'auteurs et compositeurs*.

example which could be adopted by other countries to the detriment of European authors and composers<sup>19</sup>.

In other words, there appears to be the beginning of a formal recognition that industry regulation may have implications beyond the immediate domestic industry and may act in a wider international strategic dimension.

### 3 Conclusion

In this paper we examined how legal institutional structures affected regulatory performance in markets for intellectual property through the practice of sequential and partial regulation. We initially outlined the conceptual ramifications of these means of regulation. Namely, the effect of regulating a multiple market intellectual property on a single 'market-by-market' basis (sequential regulation) where the performance in other markets for the same intellectual property is taken as given (partial regulation). We demonstrated that these methods of regulation can create an incentive for copyright and antitrust laws to be employed strategically by consumers, firms and regulators. They also create scope for the use of regulation as a strategic international device to maximise the benefits and minimise the costs of R&D expenditure on the development of intellectual property. At worst, this could give rise to international regulation wars which would adversely affect R&D activity.

The theoretical exposition was complemented by an analysis of two regulatory decisions in the market for music performance rights in the USA. Both cases exemplify sequential and partial regulation and in particular, the use of strategic regulation by American consumers and possibly regulators. Furthermore, the analysis identifies the pivotal role of private litigation in US market regulation. This appeared to account for a long lag time between the creation of scope for regulation, and actual regulatory action. This, in turn, creates regulatory price disequilibrium, first mover advantages and hence the incentive to use the law for strategic ends.

It is interesting that although a form of rent-seeking is an outcome identified in this analysis, it does not depend on the standard theories of rent seeking and regulation which rely on agency capture. In this analysis, rent seeking results even when an independent regulator is not thwarted in its aim of maximising welfare within its own jurisdiction.

Thus, the analysis adds a further argument in favour of the already strong case for the view that the regulatory jurisdiction of antitrust and copyright law should be extended from the national to the international level. In addition, it suggests that within any national boundary the legal domain of domestic regulatory authorities (such as the US Department of Justice)

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<sup>19</sup> The Official Journal of the European Communities (No. C1775, 11th June 1997).

and the law courts should be examined in order to consider the viability of regulating a greater number of related domestic IPR markets simultaneously. The wider the realm of regulatory power across related markets, the less scope for strategic manipulation of the laws and the greater the ability of price regulators to achieve the ideal of simultaneous price regulation of related IPR markets.

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