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Efficient Contracting Under The U.S. Copyright Termination Law^{*}

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Abstract

The American copyright act from 1976 allows authors to terminate their copyright grants after a certain vesting period if these are not categorized as work made for hire. The literature suggests substantial effects on the author-publisher relationship because in negotiations publishers may internalize the harm from a termination decision. This paper illuminates the internalization problem and shows that contracts should be designed differently for terminating and non-terminating authors. The total remuneration offered by the initial publisher is strictly lower for authors who terminate. This paper also points out the limits of the copyright law under scrutiny considering additional institutional regulations and existing market norms.

Keywords: Efficient Contracting, Termination Right, Copyright Law, Bargaining, Author-Publisher Relationship

JEL classification: C78, K23, L82, L88, O34, Z11

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1. Introduction

In 1976, the United States Congress introduced a new law which inalienably entitles authors¹ and their heirs to terminate grants of copyright assignments after a vesting period of 35 years. This right relates to all creations which were released post-1978 and which are not work made for hire.² If the grant is terminated, the entire bundle of rights under copyright reverts to the originator or her statutory successors, and the licensee is no longer entitled to use the creation without the originator's permission.

There is one goal of the law which directly affects the author-publisher³ relationship: to grant authors both more rights to control their works and more profits from their works (Abdullahi 2012). While defining the law, the U.S. Congress was motivated to remedy the imbalance between publishers and authors because the latter were forced to accept poorly paid buyout contracts over the last decades (Gilbert 2016). The idea was to provide authors with a second chance to obtain fair remuneration for creative efforts in which they are paid an amount proportional to the value of their creation (Brown 2014; Darling 2015; Gilbert 2016). However, such a law also implies that a publisher's control over a licensed work is limited and that profitability per copyright grant may decrease. The bargaining power disparity between publishers and authors may result in a situation where publishers internalize potential harms and react by offering different contracts to authors who profit from these harms (Karp & Perloff 1993; Gayer & Shy 2006; Rub 2013; Darling 2015).

Another problem is elucidated by considering that there exist works which are not subject to termination⁴, and that now two different classes of authors exist in the various creative industries: termination-entitled authors, and all remaining authors. Let contract design be

¹ The indication "author" pertains to any type of creator of copyrightable work.

² There are a few more requirements, e.g. necessary termination notices, which are of minor importance to the underlying study, but can be followed under 17 U.S.C. §203. Further discussions and the history of the law may be found in Abdullahi (2012).

³ By publisher we mean all types of intermediaries between authors and the consumers of creative goods, such as record labels in the music industry or publishers in the print media.

⁴ Authors are not entitled to terminate if their relationship is work made for hire or if they fail to serve a notice of termination on the grantee (Brown 2014).

defined as the remuneration structure in an agreement. With respect to Williamson (1979), we believe that a unilateral termination option may require a more precise distinction in contract designs between these two classes. Copyright grant termination may decrease the degree to which a publisher is willing to incur durable transaction-specific investments, and increase the uncertainty within the contractual relationship. The named issues might affect transactions and consequently the specifications in contracts (Williamson 1979).

The lawsuit has led to a heated debate, and the overall reactions reflect the bilateral nature of the negotiations. Composers and established superstars in the music industry such as Don Henley (the Eagles), Bob Dylan, or Bryan Adams (among many others) warmly welcome the termination clause, value it as fair, and hope for increasing authors' shares over the "gazillion dollars" the publishers make with their works. Many of them already expressed their readiness to terminate agreements or even already filed to regain the rights to some of their compositions (Rohter 2011). On the other hand, labels from the music industry fear the termination clause as "life-threatening" and signal "that they will not relinquish recordings they consider their property without a fight" (Strohm 2003; Rohter 2011).

The problem for record industries is exacerbated by the emergence of the digital age. Piracy, especially on new releases, and new business models (e.g. streaming services) decreased revenues, and have led to publishers disproportionately relying on their back catalog sales (Zentner 2006; Rohter 2011). Copyright grant terminations may prevent such back catalog sales and thus reduce publishers' revenues (Starshak 2001; Rohter 2011; Gilbert 2016).

Most studies agree that the termination right substantially affects the author-publisher relationship (Patry 1999; Abdullahi 2012) and many argue that there is a direct influence on the initial contracting situation (Patry 1999; Rub 2013; Brown 2014; Darling 2015; Gilbert 2016). This is due to the fact that copyright law affects the decision making process of the concerned parties (Tschmuck 2009; Darling 2015). In particular, termination rights reduce prices for initial copyright assignments because publishers adjust their expectations

downwards. Furthermore, their willingness to offer similar deals as before decreases (Rub 2013; Brown 2014; Darling 2015). Some contributions in the literature agree that this would also affect the payment structure of termination-endangered contracts, and may lead to more contracting around procedures (Starshak 2001; Rub 2013). The problem for creative industries is that most contracts are standardized, and offer limited choice and variety to authors (Karp & Perloff 1993; Caves 2000; Murphy 2002; Tschmuck 2009; Rub 2013).

The literature also suggests findings from further cases. In the context of the employer-employee relationship in labor markets, it is often observed that a unilateral option to dissolve employment relationships affects cost-reward structures of the involved parties. As a consequence, the types of agreements and the efforts to find mutually preferable agreements may change in the presence of termination clauses (Martin 1977; Stiglitz & Weiss 1983). Brickley et al. (1991) analyze the impact of unilateral termination clauses in the context of franchising contracts. They show that policies which allow termination clauses to franchisees would restrict contractual possibilities to franchisors. Furthermore, Brickley et al. (1991) point out that contracts would be less restrictive in areas where termination clauses do not exist. Termination clauses are also analyzed in real estate and credit markets. It is shown that optimal contracts are contingent on termination incentives (Hallman et al. 2011). In particular, a contract design may change whenever a credible possibility to terminate a relationship exists (Stiglitz & Weiss 1983; Hallman et al. 2011). Although neither of these papers attempts to measure the impact of a unilateral termination option with respect to the U.S. copyright law, the findings in the literature disclose that changes in the contractual relations between authors and publishers can be expected.

The following section lists our assumptions and sets up the model. Section 3 yields and juxtaposes the termination criterion and the efficiency criterion. Section 4 defines the efficient contract design and analyzes impacts on the initial remuneration of authors. Section 5 shows limits of the U.S. termination law and discusses our results. Section 6 concludes the analysis.

2. The model

An author⁵ (denoted A) and a publisher (denoted P) bargain over the copyright grant⁶ for a specific creation or a series of creations. The possible contract design contains a fixed one-time payment F and a royalty r . The royalty $r \geq 0$ is a share of the expected operational profit $\mu > 0$.⁷ Consider that μ already includes P's assessment of the project's total present value and is consequently discounted in time. The one-time payment may be positive, negative or equal to zero.⁸ Both remuneration parameters r and F can be considered endogenous.

Assume that both players have complete and perfect information, and that the sets of strategies and utilities will be considered in each respective payoff function (Nash 1953). Moreover, assume both players are rational and profit maximizing individuals, and risk neutral (at least initially). We additionally assume that if A terminates the contract, P will always accept the termination and will not litigate. Finally, assume that the author will be the one who terminates and earns the fruits of termination.⁹

The sequence of events is illustrated in Figure 1. At the initial bargaining stage, depicted by the box labeled "A, P", the players may agree over r and F . If they do not agree, they can fall back on their respective outside options, denoted d_A and d_P . If they do agree, A may choose whether or not to terminate the deal after the vesting period, labeled by the circle named "A". In the case of no termination, A receives the payoff λ , which contains a royalty and a fixed

⁵ For simplicity we assume that there exists only one author. It may be possible that the personality rights of a creation belong to more than one author; however, this is of minor importance to the contracting problem.

⁶ Copyright grants usually include the exclusive rights of usage, e.g. the right to physically produce and to market an idea.

⁷ Royalties greater than one are rather not observed in creative industries (Caves 2000). For example in the music industry they tend to vary around 10 percent (Zentner 2006). However, for analysis purpose we do not want to limit our model to this observation and allow for royalties equal to or greater than one.

⁸ In the real world, fixed honorariums are predominantly paid from publishers to authors in creative industries (Caves 2000; Zentner 2006). For the same purpose as explained under the previous footnote, we allow here for an upfront investment by the author as well.

⁹ The law suggests that in case of the author's death, the termination right transfers to her statutory successors. Actually it makes no difference who terminates, it is just important that the termination decision is reflected in the initial bargaining stage for the problem under scrutiny.

payment, deducted by her cost c_A .¹⁰ Her opportunity to terminate thereby lapses. P would earn ψ , which is the royalty deducted part of the expected operational profit minus the fixed payment (if positive) and minus her cost c_P .¹¹

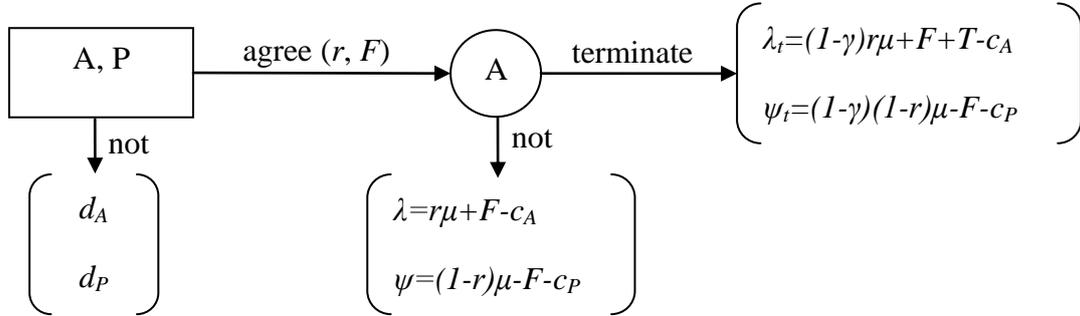


Figure 1: Sequence of events

If A terminates the deal, the expected operational profit decreases. This is captured by $\gamma \in]0, 1[$ where the importance of μ decreases with $\gamma \rightarrow 1$. This is reflected in A's payoff λ_t because she is involved in the total operational profit whenever $r > 0$. Moreover, A gets a fixed payment F minus her cost c_A , and additionally receives termination revenue streams denoted T . These streams reflect the discounted present value of expected revenues after termination if A manages to exploit her creation a second time elsewhere.¹² Then, $T \geq 0$ and we assume that A and P will not renegotiate the terms of the contract. P's payoff is ψ_t , which is the royalty deducted part of the now negatively affected expected operational profit minus the fixed payment and minus her cost c_P .

Note that only agreements which satisfy the axioms of the Nash bargaining solution are considered (Nash 1953). Thus, $\lambda > d_A$ $\psi > d_P$ and $\lambda_t > d_A$ $\psi_t > d_P$ must hold true. By implication, the scenario without termination is equal to a copyright system without a termination right

¹⁰ The cost can be considered as the cost of expression, which is time and effort invested into the underlying creation (a detailed description can be found in Caves 2000).

¹¹ This cost already includes all relevant types of costs such as marketing, agent, and administrative costs. A nice overview is given in Caves (2000).

¹² Personal motives, such as holding the control over the creation's copyright again, can also be evaluated in monetary terms and may be reflected in T . Rohter (2011) points out that this may be relevant for many instances, at least in the music business.

because P's expected operational profit remains unaffected. This also refers to work made for hire or other works which are exempted from termination clauses.

3. Termination decision and collective desirability

3.1 Termination condition

Due to our backwards induction approach, we first analyze the last stage. Whether the contract is terminated or not is determined by A. At this stage of the game, the optimal royalty and fixed payment will already be agreed upon. As a rational player, A will choose the option which grants the highest individual payoff. Thus, A terminates if $\lambda_t \geq \lambda$. This is satisfied if $(1-\gamma)r\mu + F + T - c_A \geq r\mu + F - c_A$ holds true, and the termination condition is

$$r \leq \frac{T}{\gamma\mu}. \quad (1)$$

Condition (1) can be rearranged to yield $\gamma r\mu \leq T$. We can interpret this result in the following way: A has an incentive to terminate whenever her termination revenue streams can compensate the losses of her share of the expected operational profit.

3.2 Efficiency condition

The termination decision would be efficient for the contracting parties if it increases the cooperation rent without changing their proportions on the rent. We can illustrate this situation by juxtaposing the sum of both player's payoffs from the respective scenarios. Thus, the fulfillment of inequality (1) reveals an increase in cooperation rent if $\lambda_t + \psi_t \geq \lambda + \psi$ is satisfied. Inserting the details for the payoffs yields $(1-\gamma)r\mu + F + T - c_A + (1-\gamma)(1-r)\mu - F - c_P \geq r\mu + F - c_A + (1-r)\mu - F - c_P$, and rearrangement reveals the condition

$$1 \leq \frac{T}{\gamma\mu} \quad (2)$$

under which the termination decision is efficient. This condition tells us that the cooperation rent increases whenever the termination revenue streams outweigh the losses on expected operational profit.

3.3 Desirability condition

Now that we have determined the termination and the efficiency conditions, it remains to determine the condition under which the termination decision is collectively desirable. This is the case if A terminates the contract and the cooperation rent increases, and vice versa, if A does not terminate while the cooperation rent decreases. Merging conditions (1) and (2), we can state:

Lemma 1. The termination right is only desirable to all negotiating parties if $r \leq \frac{T}{\gamma\mu} \geq 1$ or if

$r > \frac{T}{\gamma\mu} < 1$ is satisfied. ■

Our result shows that there may exist a source of conflict if Lemma 1 does not hold true. Imagine that the initial contract includes a royalty close to zero, but T is just slightly smaller than $\gamma\mu$. Then, A will perceive the losses on her share of the expected operational profit as smaller than the termination revenue streams and terminate the contract even though it decreases the cooperation rent. Indeed, this would make A better off, but also externalize a disproportionate harm on P.

Figure 2 illustrates this problem. Condition (1) is described by the 45°-line, where any position to the right depicts the incentive to terminate the copyright grant. The vertical dotted line shows condition (2), where any point to the left depicts decreasing cooperation rent, and

any point to the right the opposite. The white areas 1 and 3 then reflect our result from Lemma 1. The hatched areas 2 and 4 are the discussed scenarios under which there is a trade-off between termination incentives and collective desirability, i.e. Lemma 1 does not hold true.

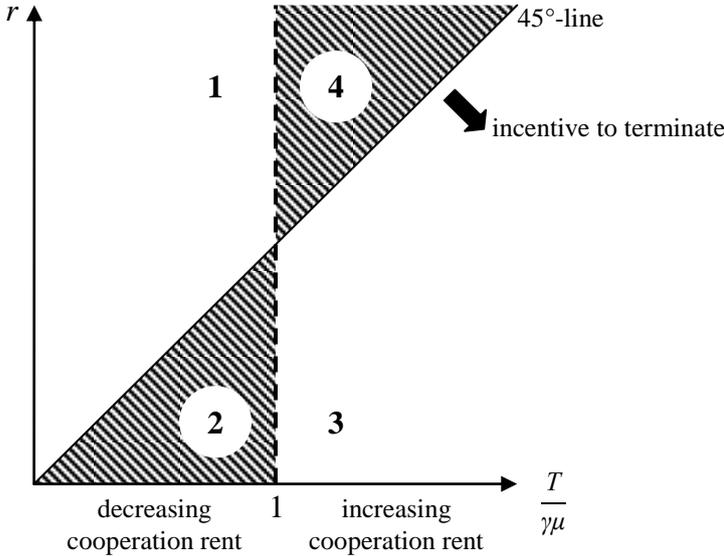


Figure 2: Termination incentive vs. cooperation rent

Whereas area 4 is a forgone opportunity, as A would not be induced to terminate even though it would increase cooperation rent, the hatched area 2 is a serious harm, as it is not even Kaldor-Hicks efficient. The loss of P's share from the expected operational profit is not compensated by A's additional benefit from termination revenue streams. In this case, the termination right would be undesirable from an economic perspective.

Our analysis reveals an important matter: the choice of royalty in the initial contract has a significant impact on the effectiveness and the efficiency of termination rights. Thus, and probably more important, the termination decision should be internalized in the initial contract to incentive A appropriately. Because the optimal solution is dependent on the choice of royalty, there may exist a necessity for different schemes regarding royalties and fixed payments. We will dedicate the following section to this problem.

4. Efficient contracting

4.1 Optimal royalties and fixed payments

Finalizing our backwards induction approach, we determine the Nash bargaining solution which maximizes the cooperation rent in both scenarios. There exists a source of conflict regarding the remuneration of A, in that A and P need to negotiate over the royalty and fixed payment to define the optimal contract. Following condition (2), the cooperation rent may differ depending on the termination decision, leading us to consider both scenarios separately. During the negotiations, both contestants will use their expectations about future outcomes to determine the size of their share of the cooperation rent. Let us first consider the royalty in the bargaining situation where condition (1) is not fulfilled, denoted r_n . The fixed payment is denoted F_n in this scenario. Let NP_n be the Nash product and $\alpha \in]0, 1[$ indicate the relative bargaining power of A. We can then define $NP_n = \text{argmax}[\lambda - d_A]^\alpha [\psi - d_P]^{(1-\alpha)} = \text{argmax}[r_n \mu + F_n - c_A - d_A]^\alpha [(1-r_n)\mu - F_n - c_P - d_P]^{(1-\alpha)}$. The first order condition for an internal maximum of the Nash product is $\partial NP_n / \partial r_n = \alpha \mu (r_n \mu + F_n - c_A - d_A)^{\alpha-1} - (1-\alpha) \mu ((1-r_n)\mu - F_n - c_P - d_P)^{\alpha-1} = 0$ and rearrangement yields the optimal royalty for the case in which A exercises her termination right

$$r_n^*(F_n) = \frac{\alpha(\mu - c_P - d_P + (\frac{1}{\alpha} - 1)(c_A + d_A))}{\mu} - \frac{F_n}{\mu}. \quad (3)$$

The first derivate with respect to F_n yields the first order condition $\partial NP_n / \partial F_n = \alpha (r_n \mu + F_n - c_A - d_A)^{\alpha-1} - (1-\alpha) ((1-r_n)\mu - F_n - c_P - d_P)^{\alpha-1} = 0$, and the optimal fixed payment is

$$F_n^*(r_n) = \alpha(\mu - c_P - d_P + (\frac{1}{\alpha} - 1)(c_A + d_A)) - r_n \mu. \quad (4)$$

Now consider the case that A intends to terminate the contract, as a result of which NP_t defines the Nash product, r_t is the royalty and F_t denotes the fixed payment. Consequently, $NP_t = \text{argmax}[\lambda_t - d_A]^\alpha [\psi_t - d_P]^{(1-\alpha)} = \text{argmax}[(1-\gamma)r_t\mu + F_t + T - c_A - d_A]^\alpha [(1-\gamma)(1-r_t)\mu - F_t - c_P - d_P]^{(1-\alpha)}$ defines the respective Nash product, and the first derivative with respect to r_t yields the first order condition $\partial NP_t / \partial r_t = \alpha(1-\gamma)\mu((1-\gamma)r_t\mu + F_t + T - c_A - d_A)^{\alpha-1} - (1-\alpha)(1-\gamma)\mu((1-\gamma)(1-r_t)\mu - F_t - c_P - d_P)^{\alpha-1} = 0$. The Nash bargaining solution then suggests

$$r_t^*(F_t) = \frac{\alpha((1-\gamma)\mu - c_P - d_P + \left(\frac{1}{\alpha} - 1\right)(c_A + d_A - T))}{(1-\gamma)\mu} - \frac{F_t}{(1-\gamma)\mu} \quad (5)$$

as the optimal royalty given that A will terminate the contract. The first order condition with regards to F_t is $\partial NP_t / \partial F_t = \alpha((1-\gamma)r_t\mu + F_t + T - c_A - d_A)^{\alpha-1} - (1-\alpha)((1-\gamma)(1-r_t)\mu - F_t - c_P - d_P)^{\alpha-1} = 0$. Thus, the optimal fixed payment to maximize the Nash product is

$$F_t^*(r_t) = \alpha \left((1-\gamma)\mu - c_P - d_P + \left(\frac{1}{\alpha} - 1\right)(c_A + d_A - T) \right) - (1-\gamma)r_t\mu. \quad (6)$$

Proposition 1. In the presence of a unilateral termination right, the Nash bargaining solution predicts that contracts are efficient if royalties are chosen such that

$$r^*(F) = \begin{cases} \frac{\alpha(\mu - c_P - d_P + \left(\frac{1}{\alpha} - 1\right)(c_A + d_A))}{\mu} - \frac{F}{\mu} & , r > \frac{T}{\gamma\mu} \\ \frac{\alpha((1-\gamma)\mu - c_P - d_P + \left(\frac{1}{\alpha} - 1\right)(c_A + d_A - T))}{(1-\gamma)\mu} - \frac{F}{(1-\gamma)\mu} & , r \leq \frac{T}{\gamma\mu} \end{cases} \quad (7)$$

and fixed payments comply with

$$F^*(r) = \begin{cases} \alpha \left(\mu - c_P - d_P + \left(\frac{l}{\alpha} - 1 \right) (c_A + d_A) \right) - r\mu & , r > \frac{T}{\gamma\mu} \\ \alpha \left((1-\gamma)\mu - c_P - d_P + \left(\frac{l}{\alpha} - 1 \right) (c_A + d_A - T) \right) - (1-\gamma)r\mu & , r \leq \frac{T}{\gamma\mu} \end{cases} \quad (8)$$

Proof. The proof follows from equations (3) - (6) and condition (1). ■

Now that we have determined the optimality conditions needed to maximize the Nash product, we may take a closer look at the initial remuneration to authors. In the literature we observe not only the view that initial payment structures may be affected (Patry 1999; Gilbert 2016) as shown under Proposition 1, but also concerns about the fact that publishers may negotiate lower-paying royalties and less favorable deal points by internalizing the termination of a copyright grant within initial negotiations (Rub 2013; Brown 2014; Darling 2015). This argument comes from the fact that the initial assignment of a copyright would be less valuable to publishers, and they would consequently decrease prices (Darling 2015).

Using our model we can predict a result for this claim. Recall that in our set-up the total initial remuneration consists of a share of the profit and a fixed payment. If condition (1) is not fulfilled, this can be represented by $r_n\mu + F_n$. If this condition is satisfied, A's total initial remuneration is $(1-\gamma)r_t\mu + F_t$. Comparing these two payments leads to the next result:

Proposition 2. Authors who terminate their contracts realize strictly lower total remunerations from the initial contract compared to their non-terminating or non-entitled colleagues. Moreover, higher termination revenue streams lower the total initial remuneration.

Proof. A's payment assuming termination is strictly lower if $r_n\mu + F_n > (1-\gamma)r_t\mu + F_t$ holds true. From Proposition 1 we know that the optimal royalties and fixed payments are consistent with condition (1). If we plug the results from (7) and (8) into the previous inequality, we get

$$\left(\frac{\alpha(\mu-c_P-d_P+\left(\frac{1}{\alpha}-1\right)(c_A+d_A))}{\mu}-\frac{F_n}{\mu}\right)\mu+F_n > \left(\frac{\alpha((1-\gamma)\mu-c_P-d_P+\left(\frac{1}{\alpha}-1\right)(c_A+d_A-T))}{(1-\gamma)\mu}-\frac{F_t}{(1-\gamma)\mu}\right)(1-\gamma)\mu+F_t,$$

wherein the fixed payments cancel out. Rearrangement then reveals $\gamma\mu > (1-1/\alpha)T$. As long as $0 < \alpha < 1$, the right hand side is always negative. Due to our assumption that $\gamma > 0$, the left hand side is always positive, confirming our result. Furthermore, let $R_t = \left(\frac{\alpha((1-\gamma)\mu-c_P-d_P+\left(\frac{1}{\alpha}-1\right)(c_A+d_A-T))}{(1-\gamma)\mu}-\frac{F_t}{(1-\gamma)\mu}\right)(1-\gamma)\mu+F_t$ be the total remuneration given that (1) is true. The first derivative of R_t with respect to T then yields $\partial R_t / \partial T = \alpha - 1 < 0$, and shows that $R_t \rightarrow -\infty$ as $T \rightarrow \infty$. This proves that the total initial remuneration decreases in the termination revenue streams. ■

Our prediction stems from the fact that the termination decision is a negative externality on the cooperation rent since it cuts off some part of the expected operational profit. The anticipating P will internalize this in the initial contract by tapping some of the termination revenue streams. Consequently A initially receives less, as demonstrated in Proposition 2.

This result supports and mathematically proves the view in the literature that the termination right may force authors into lower paying contracts. In particular, the initial contract contains a lower initial remuneration in exchange for a payment from a termination revenue stream in the future.

4.2 Contract designs

We analyzed how royalties and fixed payments should be chosen to incentivize terminating and non-terminating authors to maximize the Nash products under Proposition 1. However, it remains to be seen how contracts should be designed in the different scenarios to reveal efficient outcomes for all involved parties. Figures 3 and 4 use the results from Proposition 1 to juxtapose r and F considering the efficiency criterion. The curves represent equations (3) and (5) respectively. In both Figures we can see that r_t is steeper than r_n . The comparison of

the first derivatives of the curves' functions proves this observation as $\partial r_n / \partial F_n = -1/\mu > \partial r_t / \partial F_t = -1/(1-\gamma)\mu$.

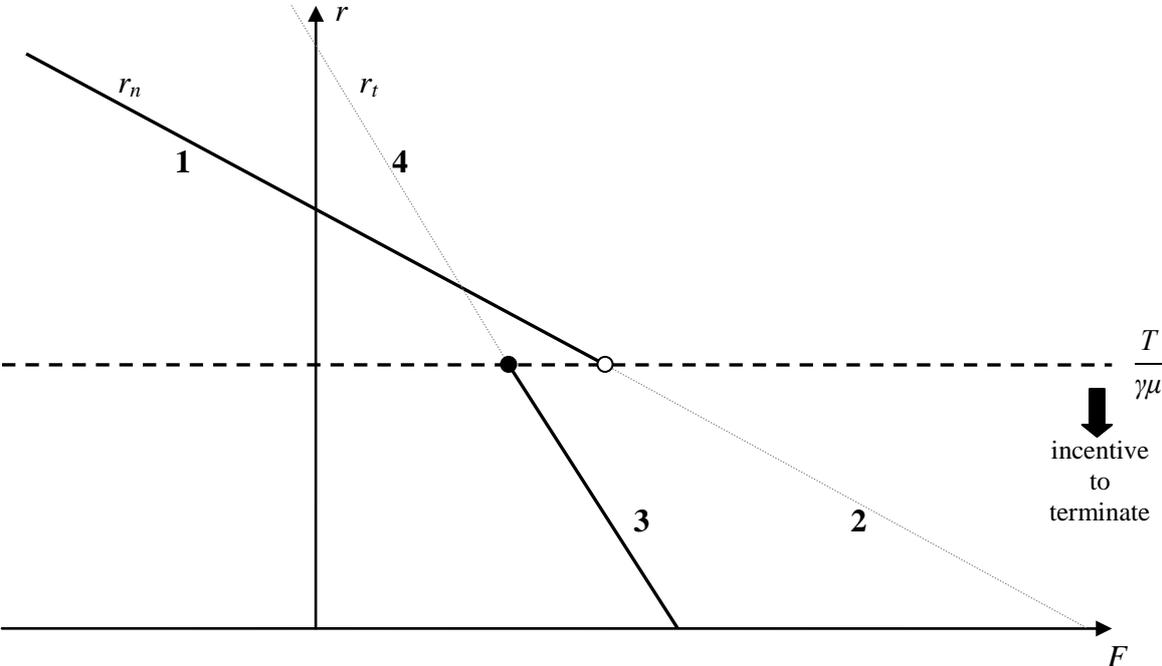


Figure 3: Efficient contracts if $r^{int} > \frac{T}{\gamma\mu}$

The dotted horizontal line in both Figures 3 and 4 illustrates the termination border, below which the author has an incentive to terminate the contract. Thus, all positions on the bold curve to the top of the termination border depict Nash product maximizing r - F combinations if condition (1) is not satisfied. Note that any position on this curve yields equal payoffs to the players in this scenario. The bold curve to the bottom represents Nash product maximizing r - F combinations given the fulfillment of condition (1). Any position on this curve leads always to the same payoff for A and P in the termination scenario. The light curves show r - F combinations which would not fulfill Lemma 1 and yield undesired cases. Consequently, the numbers 1, 2, 3, and 4 reflect the respective areas in Figure 2.

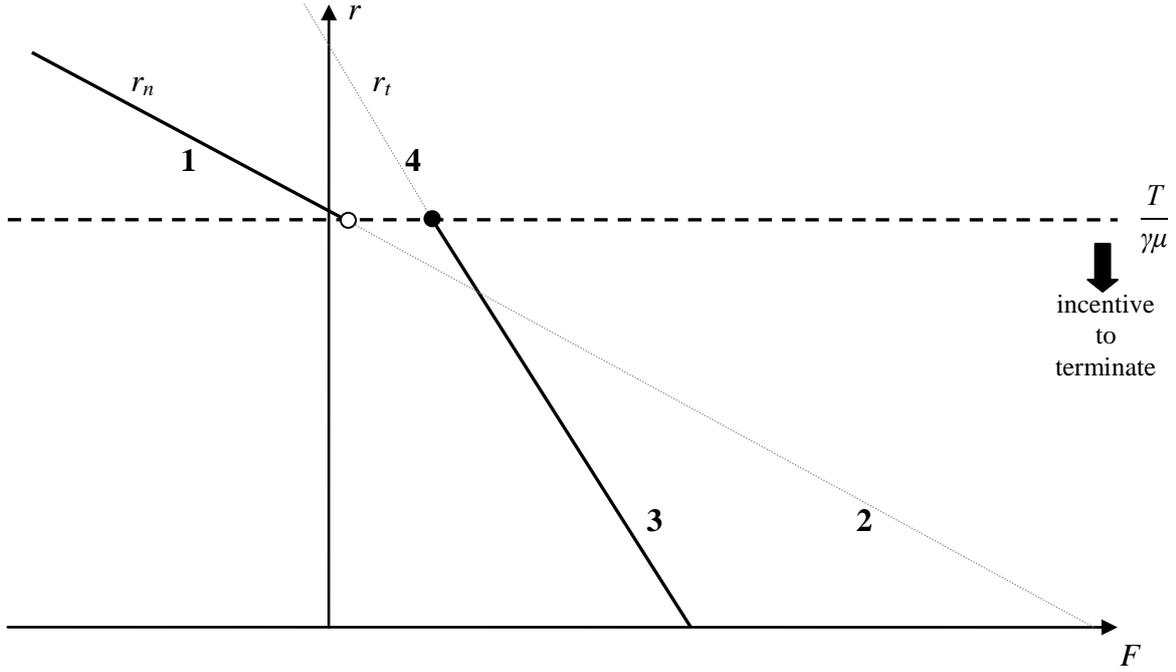


Figure 4: Efficient contracts if $r^{int} < \frac{T}{\gamma\mu}$

Let r^{int} be the intersection between both curves. In this position, $r_n = r_t$ and $F_n = F_t$. We can find the intersection mathematically by setting equation (4) equal to equation (6), where $r_n = r_t = r^{int}$.

The rearrangement with respect to r^{int} yields $r^{int} = \alpha + (1-\alpha)\frac{T}{\gamma\mu}$. We can use this to explain the

difference between Figure 3 and 4: In the former, the termination border is lower compared to the intersection between both curves, i.e. $\alpha + (1-\alpha)\frac{T}{\gamma\mu} > \frac{T}{\gamma\mu}$. In the latter, the termination border

is above the intersection, i.e. $\alpha + (1-\alpha)\frac{T}{\gamma\mu} < \frac{T}{\gamma\mu}$.

This observation is significant for the efficient contract determination with respect to the fixed payment. In particular, there exist potential settings under which the efficient parts of the curves overlap as shown in Figure 3. But there are also settings where the curves are positioned such that certain fixed payment levels are excluded from the efficient result, as we can see in Figure 4. Let F_n^{int} and F_t^{int} denote the fixed payment for which the respective curve

intersects with the termination border. Then, $F_n^{int} = \alpha(\mu - c_P - d_P + (1/\alpha - 1)(c_A + d_A)) - \frac{T}{\gamma}$ and $F_t^{int} = \alpha((1 - \gamma)\mu - c_P - d_P + (1/\alpha - 1)(c_A + d_A - T)) - \frac{T(1 - \gamma)}{\gamma}$, and we can formulate the next results:

Proposition 3. There exists (i) no unique contract design which maximizes the cooperation rent efficiently at all times because a terminating author should receive lower royalties compared to a non-terminating author. The contract may include fixed payments which are (ii) systematically diverse or (iii) equal for terminating and non-terminating authors. There exist parameter settings under which (iv) no contract design maximizes the cooperation rent because $F = \emptyset$.

Proof. The proof for (i) follows immediately from Lemma 1. Note that the fulfillment of Lemma 1 is sufficient for (i) to be true. (ii) holds true whenever $r^{int} = \alpha + (1 - \alpha)\frac{T}{\gamma\mu} < \frac{T}{\gamma\mu} \wedge F_n < F_n^{int} \wedge F_t \geq F_t^{int}$ or if $r^{int} = \alpha + (1 - \alpha)\frac{T}{\gamma\mu} > \frac{T}{\gamma\mu} \wedge F_n < F_t^{int} \wedge F_t \geq F_n^{int}$. Note that (ii) is also sufficient to confirm the necessity of unique contracts. If $r^{int} = \alpha + (1 - \alpha)\frac{T}{\gamma\mu} > \frac{T}{\gamma\mu} \wedge F_t^{int} \leq F < F_n^{int}$ then statement (iii) holds true. Note that (iii) is not a sufficient condition to define a unique contract and requires the consideration of Lemma 1. Statement (iv) is only relevant if $r^{int} = \alpha + (1 - \alpha)\frac{T}{\gamma\mu} < \frac{T}{\gamma\mu} \wedge F_n^{int} \leq F < F_t^{int}$. This implies that there only exist efficient contract designs whenever (iv) does not hold true. ■

We see from Proposition 3 that a one-size fits all contract design is inappropriate. Explicitly, terminating authors must receive contracts which are designed differently than those for non-terminating authors. Implicitly, authors who are entitled to terminate and intend to make use of their right should already receive different contracts compared to their non-entitled

colleagues. From now on, we aggregate all authors who are not entitled to terminate or who will not terminate the contract into the category "non-terminating author".

Another fact is that the publisher, anticipating her loss and the benefit of her contestant in the future, participates indirectly by offering a different contract to A (see Proposition 1 and Proposition 2). This can be done by adjusting r , through which P has an indirect influence on the termination decision. Thus, efficient contracts can be defined through a sensible choice of royalty. We also learned from Proposition 1 that both payments are interrelated. This shows that the parties already need to sensibly consider the correct type of fixed payment when determining the royalty level.

In Proposition 3 we showed that the efficient contract decreases the share of royalties in contracts of terminating authors, and increases proportionally the amount of fixed payments. This sounds counterintuitive to our result from Proposition 2 and to the view in the literature; let us now compare these results and especially the terminology with caution. In Proposition 2, we stated that the initial remuneration decreases in exchange for a future revenue stream, because the cooperation rent decreases. There we defined the future stream as royalty-like because it has a related characteristic: it is an exchange of remuneration from the initial negotiations for a potential compensation from a different contract in the future. However in Proposition 3, the royalty level is determined on the basis of the underlying cooperation rent. In particular, the royalty there acts as an exchange for the fixed payment.

Thus, the first effect has an exogenous nature, as it follows from the termination decision and is an inter-periodical comparison. We define this the exogenous effect. The latter effect follows directly from the contract design and considers the royalty paid by the initial publisher. We define this the endogenous effect. Hence, we can conclude that the exogenous effect increases the royalty level through termination, while the endogenous effect decreases it.

5. Discussion

5.1 Institutional regulation and market norms

We now discuss the interplay between the termination right system, other copyright rules, and typical market observations. One common rule is the Droit-de-Suite, the right of authors in fine arts to be involved in future sharing of their creations. In other words, authors are entitled with a mandatory royalty for which there usually exists a prescribed level, or at least a lower boundary. In practice, the latter may be less relevant to our topic under scrutiny, but for theoretical interest let us consider this one first.

Let r^{lb} denote a lower boundary (e.g. determined by regulation) and imagine that usually $r^{lb} > \frac{T}{\gamma\mu}$, i.e. the lowest possible royalty level is higher than the termination border. This implies that authors usually will not terminate. We question the occurrence of the problem because it would require $r^{lb} > \frac{T}{\gamma\mu} > 1$ to be relevant, and inalienable royalty boundaries greater than one are not practically relevant (Caves 2000; Rub 2013). On the other hand, if evidence would reveal that authors should generally be prevented from terminating for economic reasons, a lower bound royalty may act as a remedy against inefficient termination. However in this case the presence of the termination right should be questioned.

An upper royalty bound (denoted r^{ub}), unusual in practice, would have the reverse effect: it may force authors to terminate whenever $r^{lb} < \frac{T}{\gamma\mu}$. The effects would be harmful whenever the right hand-side is smaller than one. However, if it transpires that usually $\frac{T}{\gamma\mu} > 1$, an r^{ub} may be useful to enforce contract designs that incentivize to terminate.

Now consider the more likely case, using a standardized royalty level denoted r^{st} . If $r^{st} < \frac{T}{\gamma\mu} < 1$,

A will inefficiently terminate the contract. But if $r^{st} > \frac{T}{\gamma\mu} > 1$, the forgone opportunity problem emerges. In both examples Lemma 1 is violated. The intuition is that a prescribed level systematically excludes the option to internalize the termination decision within the contract

simply because the payment structure is bound. Indeed, the choice of F may be subject to negotiations, but recall that r is the strategic component which affects A's incentives to terminate.

Standardized fixed payments are rarely implemented as a result of political decisions, but are established in contracting and are commonly observed in creative industries (Caves 2000; Zentner 2006; Rub 2013). The restriction or specification of fixed payments, which we denote F^{st} , may be critical to some degree because it may also exclude efficient contract designs. Considering Proposition 3 where $r^{int} = \alpha + (1-\alpha)\frac{T}{\gamma\mu} < \frac{T}{\gamma\mu}$ (see Figure 4), a specified fixed payment within the range $F_n^{int} < F^{st} \leq F_t^{int}$ would under no circumstances yield an efficient result. For this case, any $F^{st} > F_n^{int}$ would preclude efficient contracts for the non-termination scenario, and $F^{st} > F_t(r_t=0)$ would even preclude efficient contracts in all scenarios.

Now consider $r^{int} = \alpha + (1-\alpha)\frac{T}{\gamma\mu} > \frac{T}{\gamma\mu}$ as shown in Figure 3. Any $F^{st} > F_n^{int}$ would then preclude efficient contracts for terminating authors as well. Moreover, $F^{st} > F_t(r_t=0)$ would definitely preclude efficient contracts for terminating authors. Whether or not this would also preclude efficient contracts for the non-termination scenario depends on the parameter settings.

Thus, policy makers should not restrict or control the contract designs in creative industries in the presence of a unilateral termination option. Whereas standardized fixed payments may be harmful to some degree, it seems that standardized royalty levels may usually trigger some issues. Furthermore, standardized royalty levels may even render the termination law inapplicable by simply excluding the termination decision.

5.2 Risk aversion

Our results become more significant if we relax the risk-neutrality assumption. Authors are often assumed to be risk-averse because their alternatives and financial possibilities are limited, at least at the very first stage of their careers (Caves 2000). Since risk aversion is

modeled by a concave utility function, each additional unit of risky income (i.e. royalty payments or termination revenue streams) would increase A's utility by a decreasing rate. Authors would therefore be interested in immediate fixed payments more so than in risky future payments, even if the objective value would be the same. The consideration of more royalties or termination revenue streams in exchange for a fixed payment may lead to A's undervaluation of her utility, and consequently yield different results. The relation of the exogenous effect to the endogenous effect, which we discussed in section 4.2, may determine whether or not authors are obliged to higher royalty contracts.

If the endogenous effect prevails, i.e. the present value of royalties avoided through termination decision is smaller than the present value of termination revenue streams, A would even have an incentive to signal termination at all times in order to receive a higher fixed payment. This would systematically lead to scenarios as illustrated by the hatched area 2 in Figure 2. In particular, A would weaken her outcome from the bargaining result by inefficient termination; however, the greater proportion of riskless fixed payment could overcompensate for a non-termination contract with riskier outcomes. This would impact our result by possibly lowering the termination border, as the termination revenue streams would decrease in value. The contract designs may also change because the cooperation rent depends on the author's evaluation of the expected outcomes.

5.3 Imperfect information

Allowing for information imperfection, the discussion on efficient contracting may lead to slightly different conclusions. Publishers are typically the better informed market side and may approximate the success of a creation more sensibly (Caves 2000). However, authors very often cannot assess the course of their careers (Caves 2000) and it may be difficult for them to estimate the termination revenue streams in times of negotiations (Darling 2015).

Publishers may indeed have better access to market information than authors; but actually nobody knows what will happen in 35 years after the first copyright grant.

The problem of imperfect information encourages the doubts about the desirability of the termination law because it excludes the one-size-fits-all approach, and already necessitates the presence of information in the negotiation stage. If we additionally consider Proposition 2, and the fact that publishers are the more powerful market side, they could systematically assume authors' termination decisions and offer lower paying contracts to all entitled authors. Even non-entitled authors may be affected by these contracts, as a clear definition of who actually is entitled is overdue and may require costly decisions of courts (Strohm 2003; Abdullahi 2012).

5.4 Irrational and strategic behavior

It is well observed that market players in the creative industries do not always act rationally (Caves 2000). Authors are often considered overoptimistic or too motivated (Darling 2015) and may overestimate their options after termination, leading to the potential for an inefficient termination (compare Figure 2, hatched area 2). Furthermore, they may act irrationally by terminating as a matter of principle or for reasons of pride (Rohter 2011). Different contract structures also offer the potential for strategic behavior of publishers. Rent-seeking publishers may try to prevent authors from terminating, having different future plans in mind. A possible practice would be to offer an overpriced royalty. The effect would be inappropriate contracts as authors would never terminate. The hatched area 4 in Figure 2 illustrates this problem.

Strategic behavior and personal motives increase the risk of inefficiently designed contracts. Publishers especially will never have a guarantee until they receive a termination notice, and may consider this uncertainty in initial contracts. The consequence for our model is that the initial payment may be low, and the contract designs equal for all authors in the market as termination may be assumed at all times as discussed above.

6. Conclusion

This paper has set up a first framework to illustrate the influence of the unilateral termination option for authors under the U.S. copyright system on the contracting situation between authors and publishers. It considers contract designs which include a mixture of royalties and fixed payments.

Our model predicts that overall remuneration from initial negotiations is strictly lower for terminating authors due to the internalization of harm on publishers' profits. Moreover, different contracts are necessary for terminating authors as compared to their non-terminating colleagues, or authors who are not entitled with the termination right. In particular, contracts for terminating authors should include a lower proportion of royalties and a higher proportion of fixed payments. The results reveal that the royalty is a strategic component in contracts because it significantly affects authors' incentives to terminate. Furthermore, we have shown that contract designs exist which never maximize the cooperation rent.

The results of this paper offer several implications. As long as perfectly informed authors and publishers are free to choose any kind of contract design, they will choose one such that the efficient result is attained. This implies that standardized contract forms in creative industries should not only be reconsidered, but require a clear distinction between terminating and non-terminating authors. This stresses the need for more individual contract designs in the creative industries. It also emphasizes that institutional regulators and market players should not restrict the contract design by fixed royalty levels, as this may prevent efficient contract designs. Fixed one-time payments should also be freely negotiable for two reasons: First, the interplay between royalties and fixed payments determines the efficient contract design. Second, the study shows that there do exist ranges of fixed payments which should not be considered, since under no circumstances will they yield an efficient solution.

Turning to future research, it would make sense to analyze the topic under scrutiny while considering the dynamic effects of termination decisions on authors' careers. Creative

industries are usually characterized by long lasting relationships between authors and publishers. The importance of this relationship and trust may play a role in contracts and could be modeled in a repeated game. The consideration of risk-aversion and uncertainty, and a view from a behavioral economics perspective definitely make sense and may derive results which help to evaluate the U.S. copyright law. An empirical analysis could test the predictions of our model and reveal whether or not publishers actually differentiate between entitled and non-entitled, or terminating and non-terminating authors.

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