PUBLIC VERSION

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of **DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)**	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**

WRITTEN SUPPLEMENTAL REMAND TESTIMONY OF LESLIE M. MARX, PHD
(On behalf of Spotify USA Inc.)

NOVEMBER 15, 2021

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I. Scope of charge

(1)   I have been retained by Spotify USA Inc. ("Spotify") during this remand proceeding to review the final rates and rate structure resulting from the Phonorecords III ("Phono III") proceeding and to examine, from an economic perspective, the validity of the Majority's approach to rate-setting and the consistency of the resulting rates with the statutory objectives known as the 801(b)(1) factors. I filed my Written Direct Remand Testimony in this proceeding on April 1, 2021.[1]

(2)   After the Copyright Royalty Judges published their Order on the Services' Motion to Strike,[2] I was asked to review and respond to portions of the remand rebuttal testimonies of Dr. Jeffery Eisenach, Professor Daniel Spulber, and Professor Richard Watt.[3] I was asked to limit my response to arguments they make that are general in nature, that apply to all services, or that apply to Spotify specifically, and not to respond to arguments that apply only to a service other than Spotify. This Written Supplemental Remand Testimony constitutes my response to their testimonies within these parameters.[4]

(3)   In forming my opinion, I reviewed portions of the three remand written rebuttal testimonies listed above and material cited therein, Spotify royalty data including data submitted to the Mechanical Licensing Collective (MLC), the written direct testimony submitted by certain fact witnesses in this remand proceeding, and publicly available documents and data. All documents cited in this report are listed in Appendix A below. I reserve the right to incorporate into my analysis any new information or data that may become available subsequent to this testimony.

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[1]   I described my qualifications in Section I and included my CV in Appendix A of the Written Direct Remand Testimony of Leslie M. Marx, PhD, April 1, 2021 [hereinafter, "Marx WDRT"]. I do not restate them in this testimony.

[2]   Order Denying in Part and Granting in Part Services' Motion to Strike Copyright Owners' Expert Testimony and Granting Services' Request to File Supplemental Testimony and Briefing, *In re: Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Docket No. 16-CRB-0003-PR (2018-2022) (Remand), October 1, 2021 [hereinafter, "Supplemental Order"].

[3]   I was instructed to review and respond to ¶¶8–89 and Appendix C of the Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, PhD, July 2, 2021 [hereinafter, "Eisenach RWRT"]; ¶¶ 10–27 of the Remand Written Rebuttal Testimony of Daniel Spulber, PhD, July 2, 2021 [hereinafter, "Spulber RWRT"]; and ¶¶ 7–18, 42–46, and footnote 51 of the Remand Written Rebuttal Testimony of Richard Watt (PhD), July 2, 2021 [hereinafter, "Watt RWRT"].

[4]   If I do not dispute a particular point made in the remand rebuttal testimonies of Dr. Eisenach, Professor Spulber, or Professor Watt here, that should not be taken as implicit agreement with their argument.

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II. Summary of opinions

(4) The likelihood and magnitude of an inverse relationship, or "see-saw," between statutory mechanical royalty rates and negotiated sound recording royalty rates paid by interactive streaming services is a fundamental issue in this remand proceeding. In this supplemental remand testimony, I address certain arguments made in the rebuttal remand testimonies of Professors Watt and Spulber and Dr. Eisenach related to that issue. I also address other contentions made by Dr. Eisenach related to the utility of an uncapped total content cost (TCC) rate prong. In particular, I conclude that:

1. **Professor Watt's and Professor Spulber's discussions of bargaining theory do not illuminate the fundamental issue of the likelihood and magnitude of a "see-saw" between musical works and sound recording rates**. Professor Watt's and Professor Spulber's assertions about bargaining theory are misleading and sometimes incorrect, and in any case do not speak to the likelihood, timing, or magnitude of any see-saw in real-world negotiations between labels and interactive streaming services. The relevant question for this proceeding is not the theoretical possibility of some level of see-saw, but whether the posited theoretical relationship between sound recording and musical works royalty rates can be the basis for a reliable prediction that sound recording royalties will fall on a nearly one-for-one basis in response to any rise in musical works royalties. Professor Watt's and Professor Spulber's theoretical discussions do not illuminate this question.

2. **Dr. Eisenach's comparison of Spotify's royalty rates across the Phono II and Phono III rate periods does not speak to the see-saw question** ███████████████████████ ███. A more correct analysis of the timing and magnitude of royalty rate changes in Dr. Eisenach's own data ███ ███ ███ ██████████.

3. **Dr. Eisenach's contention that he has presented evidence that demonstrates the efficacy of an uncapped TCC rate prong is incorrect with respect to Spotify**. The "evidence" that Dr. Eisenach presents on this point with regard to Spotify has nothing to do with "revenue diminution strategies" or "anomalous reporting practices" that Dr. Eisenach points to as justifying an uncapped TCC prong. Separately, Dr. Eisenach presents misleading measures of Spotify's profitability.

In the rest of this testimony, I describe my opinions and my basis for them in more detail.

III. Professor Watt's and Professor Spulber's assertions about bargaining theory do not support a nearly one-to-one see-saw

(5) The portions of the testimonies of Professors Watt and Spulber that are within the scope of this supplemental remand testimony relate to their theoretical discussion and empirical conclusions regarding the see-saw hypothesis.[5] This hypothesis, as articulated in the Phono III Final Determination, posits that the unregulated sound recording rates paid by interactive streaming services will decline on a nearly one-for-one basis in response to increases in the services' statutory musical works royalty rate:[6]

> [T]he Judges rely on Professor Watt's insight (demonstrated by his bargaining model) that sound recording royalty rates in the unregulated market will decline in response to an increase in the compulsory license rate for musical works. . . Professor Watt's bargaining model predicts that the total of musical works and sound recordings royalties would stay "almost the same" in response to an increase in the statutory royalty.[7]

(6) In their rebuttal testimony in this remand proceeding, Professors Watt and Spulber both make assertions about how bargaining theory generally supports some see-saw effect, and they maintain that such a theoretical relationship, of whatever magnitude, provides justification for the Majority opinion in Phonorecords III.[8] The relevant question for this proceeding, however, is not the theoretical possibility of some level of see-saw, but whether the posited theoretical relationship between sound recording and musical works rates can be the basis for a reliable prediction that sound recording royalties will fall on a nearly one-for-one basis in response to any rise in musical works royalties.[9] If that condition does not hold, the total royalty burden for the services after the rate increases under Phono III deviates even further from what the Majority determined to be a reasonable

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[5] As noted in the Supplemental Order, the majority did not actually use the term "see-saw" in the Phonorecords III Final Determination. The Supplemental Order refers to the concept as the "Copyright Owners' proffered 'inverse relationship' between changes in mechanical and sound recording royalties." Supplemental Order, at fn. 12. Because the "see-saw" term has been used frequently in the direct and rebuttal testimony in the remand proceeding, I will continue to use it here to refer to this inverse relationship.

[6] Regardless of the degree of any see-saw, the fundamental problem that I identified in my direct remand testimony—that is, the services paying too much of their revenue in royalties according to the Majority's own approach—is not solved by the Phono III increase in royalty rate. As I wrote in my direct remand testimony, "[T]he Majority's own approach also showed that the Services were paying too much in royalties. That approach concluded that the Services should be paying ▮▮▮ of their revenue in royalties—an amount that is substantially less than what the Services actually pay." Marx WDRT, ¶ 25.

[7] Final Determination, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, Docket No. 16-CRB-0003-PR (CRB November 5, 2018) [hereinafter, "Phono III Final Determination"], at 73–74.

[8] *See, e.g.,* Watt RWRT, ¶ 13 and Spulber RWRT, ¶¶ 18, 26.

[9] *See* Marx WDRT, ¶ 14.

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level of total royalties for interactive streaming services.[10] I discuss in the following sections the irrelevance of Professor Watt's and Professor Spulber's testimonies for informing that particular question.

III.A. See-saw: The details matter

(7)   Professor Watt asserts that the Majority's conclusions in Phono III do not rest on a particular Nash bargaining model but are instead broadly supported by bargaining theory. He describes two "important economic principles surrounding a bargaining situation such as that between the services and the labels":[11]

   i.   All of the available net surplus will be shared.

   ii. Neither of the bargainers will demand a share such that more than the total net surplus is shared.[12]

(8)   Neither of these "core principles," as Professor Watt labels them, are actually core principles of bargaining theory. The bargaining situation between a service and a record label involves two-sided private information: the label does not know the exact maximum that a service would be willing to pay, and the service does not know the exact minimum that the label would be willing to accept. Economists have used bargaining theory to model settings like this in a variety of ways,[13] many of which have the potential for delay and/or bargaining breakdown.

(9)   In cases in which the models predict that bargaining breaks down, point (i) is violated because bargainers fail to reach an agreement and, as a result, all of the available surplus is not shared.[14] To

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[10]   "The Judges have determined a rate that is computed based on the highest value of overall royalties predicted by Professor Marx's model [%] and the ratio of sound recording to musical work royalties determined by Professor Gans's analysis [   ]." Phono III Final Determination, at 87. ▇▇" Phono III Final Determination, at 71. *See also* Marx WDRT, ¶ 25: "the Majority's own approach also showed that the Services were paying too much in royalties. That approach concluded that the Services should be paying % of their revenue in royalties—an amount that is substantially less than what the Services actually pay."

[11]   Watt RWRT, ¶ 15.

[12]   Watt RWRT, ¶ 15.

[13]   As noted by John Kennan and Nobel Prize winner Robert Wilson in their survey article, "The practice of bargaining is strongly affected by procedural features. … Exact specification of procedures is essential to obtain detailed predictions of the outcomes of bargaining. Specifications of the parties' preferences and information suffice to derive general limitations on the outcomes that are incentive compatible; however, the range of possible incentive-compatible outcomes is usually large. A substantial part of this indeterminacy is due to the wide variety of procedures that could be used." John Kennan and Robert Wilson, "Bargaining with Private Information," *Journal of Economic Literature* 31, no. 1 (1993): 50. For recent work on bargaining with two-sided private information, *see* Simon Loertscher and Leslie M. Marx, "Incomplete Information Bargaining with Applications to Mergers, Investment, and Vertical Integration," *American Economic Review* (forthcoming).

[14]   *See, e.g.,* Anat R. Admati and Motty Perry, "Strategic Delay in Bargaining," *Review of Economic Studies* 54, no. 3 (1987): 345–64 (providing a model with "equilibria involving a delay to agreement that is due to the use of strategic

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give a specific example, one way that economists have modeled bargaining in a setting such as this is with a k-double auction, where a buyer and a seller each have a private valuation for a good and simultaneously submit sealed bids of preferred trading prices: p_B for the buyer and p_S for the seller.[15] If the buyer's bid is greater than or equal to the seller's bid, then the two parties trade at a price of $kp_B + (1-k)p_S$. In this model, the parameter k represents the relative strength of the bargaining position of the buyer. If $k = 1$, then the buyer essentially makes a take-it-or-leave-it offer of p_B. If $k = 0$, then the seller essentially makes a take-it-or-leave-it offer of p_S. Of relevance here is that in equilibrium, even if the buyer's true value is greater than the seller's true cost, the buyer may submit a bid that is less than the seller's bid. In that case, there is no trade, so point (i) is violated because there is available surplus that is not shared.[16] In short, Professor Watt is mistaken when he claims that point (i) is a "core principle" of bargaining theory.

(10) Turning to point (ii), obviously agents cannot share more than what is available to share, but to see that point (ii) is not a "core principle," note that in a setting with private information, bargainers may well *demand* a share that exceeds the total that is available. For example, the optimal take-it-or-leave-it offer may turn out to exceed the available surplus, thereby resulting in bargaining breakdown.[17] Turning back to the k-double auction setting, when there are uniformly distributed types,[18] if $k = 1$, a buyer with value 1 optimally makes a take-it-or-leave-it offer of 1/2, essentially demanding a surplus of 1/2 for itself. However, if the seller's cost is greater than 1/2, then the total available surplus, i.e., the buyer's value minus the seller's cost, is less than 1/2, so the buyer has demanded a share that exceeds the total available surplus, and bargaining breaks down. As this example shows, Professor Watt is also mistaken when he claims that point (ii) is a "core principle" of bargaining theory.

(11) Even if we restrict attention to just the theoretical model of Nash bargaining, point (ii) still is not a core principle because in Nash bargaining no player makes a demand at all—Nash bargaining is just an algorithm for dividing a fixed, commonly known surplus. Point (i) is satisfied under Nash

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time delay by bargainers to signal their relative strength" (345)); Peter C. Cramton, "Strategic Delay in Bargaining with Two-Sided Uncertainty," *Review of Economic Studies* 59, no. 1 (1992): 205–25 (providing a model "in which the bargainers signal the strength of their bargaining positions by delaying prior to making an offer. … Trade occurs whenever gains from trade exist, but due to the private information, only after costly delay" (205)); *See also* Roger B. Myerson and Mark A. Satterthwaite, "Efficient Mechanisms for Bilateral Trading," *Journal of Economic Theory* 29, no. 2 (1983): 265–81.

15 *See, e.g*., Kalyan Chatterjee and William Samuelson, "Bargaining under Incomplete Information," *Operations Research* 31, no. 5 (1983):835–51; Steven R. Williams, "Efficient Performance in Two Agent Bargaining," *Journal of Economic Theory* 41 (1987): 154–72; Mark A. Satterthwaite and Steven R. Williams, "Bilateral Trade with the Sealed Bid k-Double Auction: Existence and Efficiency," *Journal of Economic Theory* 48 (1989): 107–33.

16 See the cites in the prior footnote. For a setting in which gains from trade are possible but, due to informational asymmetries, the buyer and seller fail to reach an agreement, *see, e.g.,* George Akerlof, "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism," *Quarterly Journal of Economics* 84, no. 3 (August 1970): 488–500.

17 This is well known in the auction context, where an optimal reserve price may result in no trade with positive probability. *See* Vijay Krishna, *Auction Theory*, 2nd ed. (Burlington, MA: Academic Press/Elsevier, 2010).

18 That is, the seller views the buyer's value as a random variable that is uniformly distributed on [0,1], and the buyer views the seller's cost as uniformly distributed on [0,1].

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bargaining because that model does not allow for the possibility of uncertainty, private information, delay, or inefficiency. Of course, uncertainty, private information, delay, and inefficiency are all issues that impact bargaining in the real world between a record label and a service.

(12)   Finally, even if these two "core principles" did apply to the bargaining situation between a service and a record label, they have little to say about the relevant question here: whether, in the real world, an increase in musical works rates would be met with a nearly equal and opposite response in sound recording rates in a direct, timely, and predictable manner.[19] In the real world, the negotiated royalty outcomes do not involve just two parties, but rather a sequence of overlapping, interrelated, bilateral bargains involving multiple competing services and multiple record labels with complementary oligopoly power, and those negotiations are affected by uncertainty and private information and offer no guarantee of achieving theoretically efficient outcomes. In short, Professor Watt's discussion of bargaining theory does not support any particular real-world see-saw outcome.

(13)   Professor Spulber's discussion of bargaining theory is similarly irrelevant to any assessment of possible real-world see-saw outcomes. He points out that the Nash bargaining solution, as applied to a one-shot negotiation between two parties with no uncertainty, implies Pareto optimality. He asserts that this theoretical result in turn implies that an increase in musical works rates would lead to *some* decrease in sound recording rates, all else equal. This discussion, however, does not inform the degree or likelihood of the see-saw in practice, with all the complexities affecting real-world negotiations.[20]

(14)   It is important to remember that Nash bargaining theory can support any see-saw between zero and one. To make the prediction that musical works rates and sound recording rates will move in opposite directions on a nearly one-for-one basis, Professor Watt calibrated a specific Nash bargaining model using a mixture of data and forecasts.[21]

(15)   As I discussed in my direct remand testimony, Professor Watt's calibration exercise, which yields the ▮▮▮▮ prediction relied on by the Majority in the Phono III Final Determination, is flawed, and "making modest and reasonable adjustments to either the assumptions or the inputs has dramatic effects on the outcome."[22] In particular, Professor Watt's misplaced assumption of complete symmetry of labels and services with respect to disagreement payoffs in the event of a collapse in negotiations drives his finding of a ▮▮▮▮ see-saw.[23] A lower see-saw would be more consistent with the higher disagreement payoffs available to labels relative to streaming services and would also

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[19]   *See* Marx WDRT, ¶ 14.

[20]   *See* Spulber RWRT, ¶¶ 24, 26.

[21]   Written Rebuttal Testimony of Richard Watt (PhD), February 13, 2017 [hereinafter, "Watt WRT"] at fn. 21, Appendix 3 (CO EX. R-110), at 9–12.

[22]   Marx WDRT, ¶ 33.

[23]   Marx WDRT, ¶ 38.

be consistent with basic Nash bargaining principles.[24] As I discussed in my earlier testimony, Professor Watt's model also does not take into account important real-world phenomena such as the presence of multiple "must have" major labels exerting externalities on one another, staggered negotiations, and long-term contracts that can affect the timing and impact of any renegotiation.[25] All of these make the specific prediction of Professor Watt's model unreliable as a basis for setting musical works rates at the time that the Majority issued its decision, or now.[26]

III.B. Professor Watt incorrectly implies that Dr. Eisenach has proven the see-saw

(16) Professor Watt himself develops no empirical evidence related to whether any hypothesized see-saw effect actually occurred.[27] He instead cites Dr. Eisenach's comparison of the royalty rates paid by interactive streaming services over the Phonorecords II ("Phono II") period to the royalty rates they paid over the Phono III period as evidence that he asserts is relevant to evaluating the see-saw hypothesis.[28] Although Professor Watt does not clearly state how Dr. Eisenach's comparisons relate to the see-saw hypothesis, he claims that these results support the existence of a see-saw effect, and in particular that they refute my ███████████████████████████████████ ███████████████████████████████.[29]

(17) Dr. Eisenach himself does not seem to be attempting to empirically address the see-saw theory in his analysis, and instead appears to be attempting to address a different question: whether the royalty structure imposed by Phonorecords III had a "disruptive" impact on the services or the marketplace.[30] Nowhere does Professor Watt explain how a comparison of royalty rates paid over the Phono II period to those paid over the Phono III period can be interpreted to support or refute the see-saw

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[24] As I discussed in my direct remand testimony (*see* Marx WDRT, § V.A.2), if a streaming service does not have an agreement with a major record label, then the service can expect to lose many, if not most or all, of its subscribers. So the service's disagreement payoff is essentially zero. In contrast, if a record label does not have an agreement with a particular streaming service, it can still expect to obtain revenue from the subscribers to that streaming service because it can expect many, if not most or all, of those subscribers to switch to other streaming services, thereby generating revenue for the record label. Thus, we expect a record label's disagreement payoff to be substantially larger than that of a service.

[25] Marx WDRT, § V.A.3.

[26] By contrast, I used my original Shapley model as a directional check of my benchmark analysis rather than to derive precise rates. Written Direct Testimony of Leslie M. Marx, PhD, November 1, 2016 [hereinafter "Marx WDT"], ¶ 139.

[27]   Professor Spulber also does not develop any empirical evidence related to the see-saw.

[28] Watt RWRT, ¶ 44.

[29] Watt RWRT, ¶¶ 44–46. *See also* fn. 51 ("[A]s we see from Dr. Eisenach's analysis, the actual evidence is completely consistent with the Nash bargaining model and the Board's reasoning on that issue.").

[30] *See, e.g.,* Eisenach RWRT, ¶ 8 ("The Services submit testimony from a number of witnesses claiming or implying that the Phonorecords III rates will harm the Services, the music streaming marketplace, or both. In this section, I explain why these claims are factually incorrect.").

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hypothesis. Nor does he provide his own analysis or interpretation of Dr. Eisenach's data to show how they can be interpreted to support or refute the see-saw hypothesis.

(18) The theoretical prediction of the see-saw hypothesis, as discussed by the Majority in the Phono III Final Determination and more recently articulated by the Judges in the Order on the Services' Motion to Strike, is "whether the now-vacated mechanical rates and rate structure adopted by the Judges in Phonorecords III will cause sound recording rates to fall."[31] The associated empirical question concerns "the economic interpretation of actual events, *viz.*, the movements, *vel non.*, of mechanical rates, sound recording rates, and the combination of the two, during the period from January 2018 through September 2020, when the Phono III rates and rate structure were in effect."[32]

(19) Professor Watt attempts to address the theoretical question with his Nash bargaining model that underlies the Phono III Final Determination. As Professor Watt explains it, that model predicted that, after a regulatory increase in the musical works rate, a record label would find itself having to return nearly all of that increase to services in subsequent negotiations.[33] Two important components of this prediction relate to:

1. Timing: The change in sound recording rates would occur after the change in musical works rates. Thus, the proper baseline for evaluating any change is sound recording rates at the time the Phonorecords III rate change was announced, not an average of years prior.

2. Label-by-label nature: The model predicts that lost surplus would be returned to the services through a set of individual bargaining processes between a label and a service. Thus, the see-saw hypothesis as articulated by Professor Watt's model predicts that on a label-by-label basis, sound recording rates would decrease in response to an increase in musical works rates. Note that label-by-label changes are not equivalent to changes in overall effective rates that a service pays. Overall effective rates for any given service are based on a weighted average of rates across labels and are affected by the mix of plays across labels. For instance, if small indie labels receive lower rates than major labels, then an increase in indie label plays over time will lead to a decrease in overall effective rates for a service, even if each major label charges the same or even higher rates.[34] Thus, label-by-label rate movements are more informative about any potential see-saw effect than changes in overall effective rates.

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[31] Supplemental Order, at 11.

[32] Supplemental Order, at 11. The "causation" element means that finding a change in sound recording rates for unrelated reasons does not speak to the see-saw hypothesis. Dr. Eisenach's analysis does not address the causes for any of the changes in rates that he discusses.

[33] Watt WRT, Appendix 3 (CO EX. R-110), at 12. "[F]or each percentage point that the statutory rate undercuts a fair rate, the negotiated label rate increases by ▮ percentage points." *See also* Watt RWRT, at ¶ 8.

[34] To give a simple hypothetical example, suppose that indie labels charge $1 and major labels charge $2 and that the mix of plays is 50-50. Then the effective rate will be $1.50. Even if the prices charged by indies and labels do not change, if the mix of plays changes to 75% indie and 25% major, then the effective rate decreases to $1.25, showing that effective

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(20)   Professor Watt ignores these components of the prediction, and, with no additional analysis, asserts that Dr. Eisenach's comparison of effective rates under Phono II to those under Phono III proves the see-saw hypothesis, a conclusion that Dr. Eisenach himself does not appear to draw.[35] Professor Watt

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████████████████████████ [36] I discuss in the next section Dr. Eisenach's data analysis and its implications for the see-saw prediction.

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rates can move with shifts in the play mix even when no individual rate changes.

[35]   Professor Watt refers to Dr. Eisenach's analysis in support of his bargaining model, which produces his see-saw prediction. *See* Watt RWRT, ¶¶ 45–46 ("Dr. Eisenach's analysis reveals that ████████████████████████████
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██
████████████████████████████████ "). However, Dr. Eisenach's analysis is focused on movements in sound recording and musical work royalty rates as they relate to the "disruptive" impact on services, not on the strength of Professor Watt's bargaining model. *See* Eisenach RWRT, § II.A.4.

[36]   Written Direct Testimony of Christopher Bonavia, March 31, 2021 [hereinafter, "Bonavia WDT"], ¶ 16.

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IV. Dr. Eisenach's royalty analysis does not inform the see-saw hypothesis

(21)   The concept of the see-saw is only offhandedly mentioned in Dr. Eisenach's report.[37] His analysis of trends in Spotify's and other services' royalty rates appears primarily to be an effort to assess the "disruptive impact" of the Phono III decision on Spotify and other streaming services.[38] But because Professor Watt imports Dr. Eisenach's analysis with no modification or analysis and implies that it supports the see-saw hypothesis, in this section I review in detail Dr. Eisenach's analysis of Spotify's royalty rates and its implications for the see-saw hypothesis.[39]

(22)   To be relevant for the see-saw, as the Judges note, the evaluation of how royalty rates change over time must be limited to what happened "during the period from January 2018 through September 2020 when the Phono III rates and rate structure were in effect."[40] This is the time period that begins after the announcement of the Phonorecords III rates on January 27, 2018.[41] Because the see-saw hypothesis has to do with the reaction of sound recording rates to regulatory changes in musical works rates, the analysis must start at the point of the announcement of the musical works rate change.

(23)   On the day that the Phono III initial determination was released, the National Music Publishers' Association ("NMPA") issued a press release entitled "CRB Dramatically Increases Rates for Songwriters" that quotes NMPA President & CEO David Israelite declaring, "[W]e are thrilled the [Copyright Royalty Board] raised rates for songwriters by 43.8%—the biggest rate increase granted in CRB history."[42] From this point, in reaction to "the biggest rate increase granted in CRB history," the see-saw hypothesis would predict that subsequent streaming service negotiations with individual record labels would yield lower royalty rates. This decrease in label rates would nearly fully offset the increase in mechanical rates, according to the calibration of the particular Nash bargaining model

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[37]   *See* Eisenach RWRT, ¶¶ 19, 40, fn. 47.

[38]   *See, e.g.,* Eisenach RWRT, ¶ 8 ("The Services submit testimony from a number of witnesses claiming or implying that the Phonorecords III rates will harm the Services, the music streaming marketplace, or both. In this section, I explain why these claims are factually incorrect.").

[39]   These analyses are contained in Eisenach RWRT, ¶¶ 31–43, within the scope of supplemental response as defined by the Supplemental Order.

[40]   Supplemental Order, at 11.

[41]   Initial Determination, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, No. 16-CRB-0003-PR (CRB, January 26, 2018), at 1.

[42]   National Music Publishers' Association, "CRB Dramatically Increases Rates for Songwriters," January 27, 2018, https://www.nmpa.org/crb-dramatically-increases-rates-for-songwriters/.

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used by Professor Watt that was cited by the Majority in the Phono III determination.[43] This is the hypothesis that I examined in my written direct remand testimony.[44]

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███[45] ████████████
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████████████[46] ███
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████████[47]

(25) Dr. Eisenach asserts that the evidence that he presents based on Spotify data shows ████████
██[48] ██████████████
██
██"[49] █████████████
███."[50]

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43 Phono III Final Determination, at 73–74 ("[T]he Judges rely on Professor Watt's insight (demonstrated by his bargaining model) that sound recording royalty rates in the unregulated market will decline in response to an increase in the compulsory license rate for musical works. . . . Professor Watt's bargaining model predicts that the total of musical works and sound recordings royalties would stay 'almost the same' in response to an increase in the statutory royalty.").
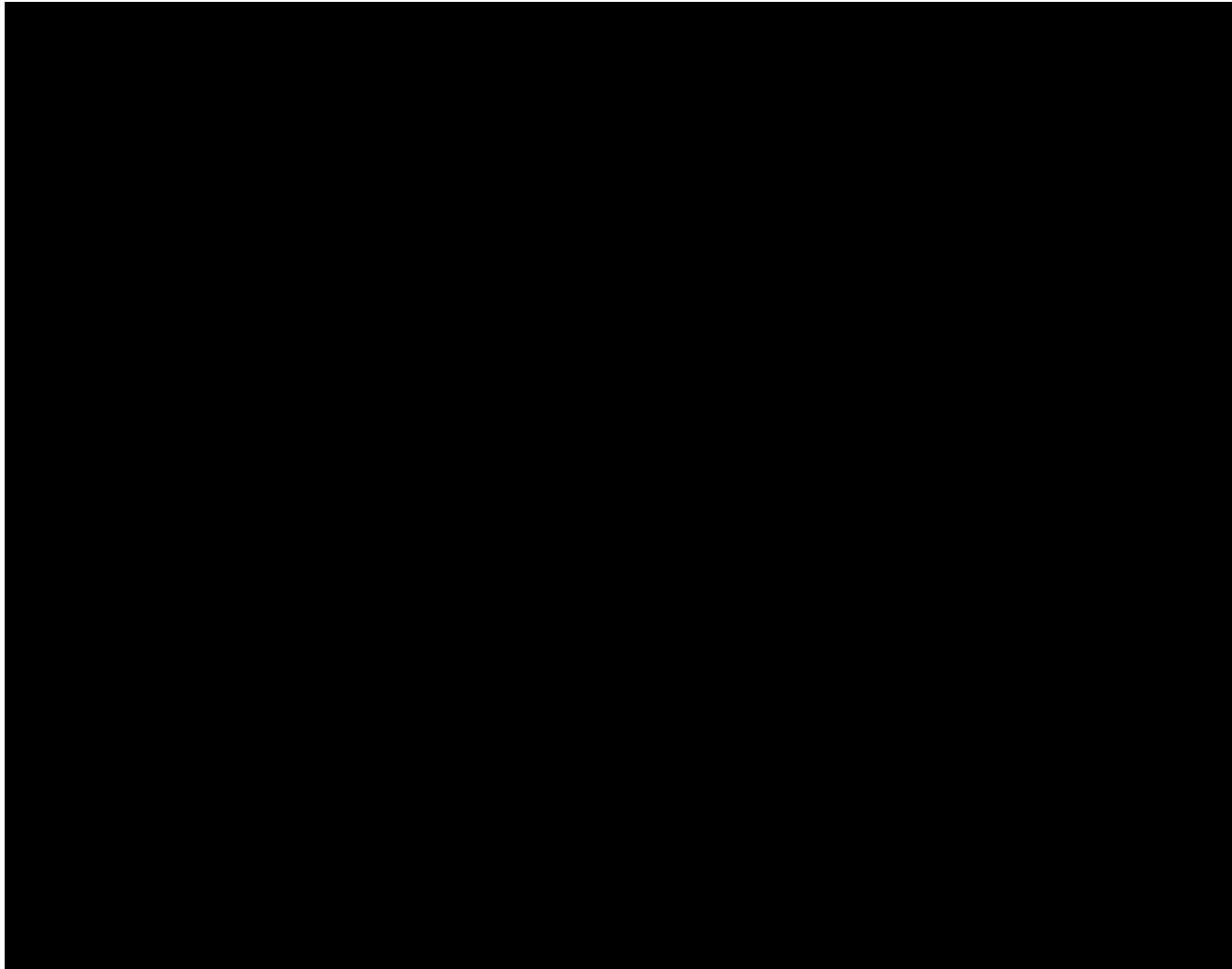
44 Marx WDRT, ¶ 27.

45 Bonavia WDT, ¶ 16.

46 Bonavia WDT, ¶ 9.

47 Marx WDRT, Figure 6.

48 Eisenach RWRT, ¶ 24.

49 Eisenach RWRT, ¶ 33, Figure 7.

50 Eisenach RWRT, ¶ 32 (emphasis in original).

(26)   As I discussed earlier, a comparison of average rates during the Phono II period to average rates during the Phono III period is not the relevant comparison for evaluating the see-saw hypothesis, nor is it the comparison that I was making in my testimony. It is difficult to see given the way Dr. Eisenach presents the information, but according to his own figure, ▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮ ▮▮▮.[51]

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[51]   TCC ("total content cost") is defined as "the amount paid by a service to a record company for the section 114 right to perform digitally a sound recording." Phono III Final Determination, at fn. 38. The TCC rate prong defines the all-in musical works royalty as a percentage of the TCC.

Written Supplemental Remand Testimony of Leslie M. Marx, PhD, Docket No. 16-CRB-0003-PR (2018–2022) (Remand)
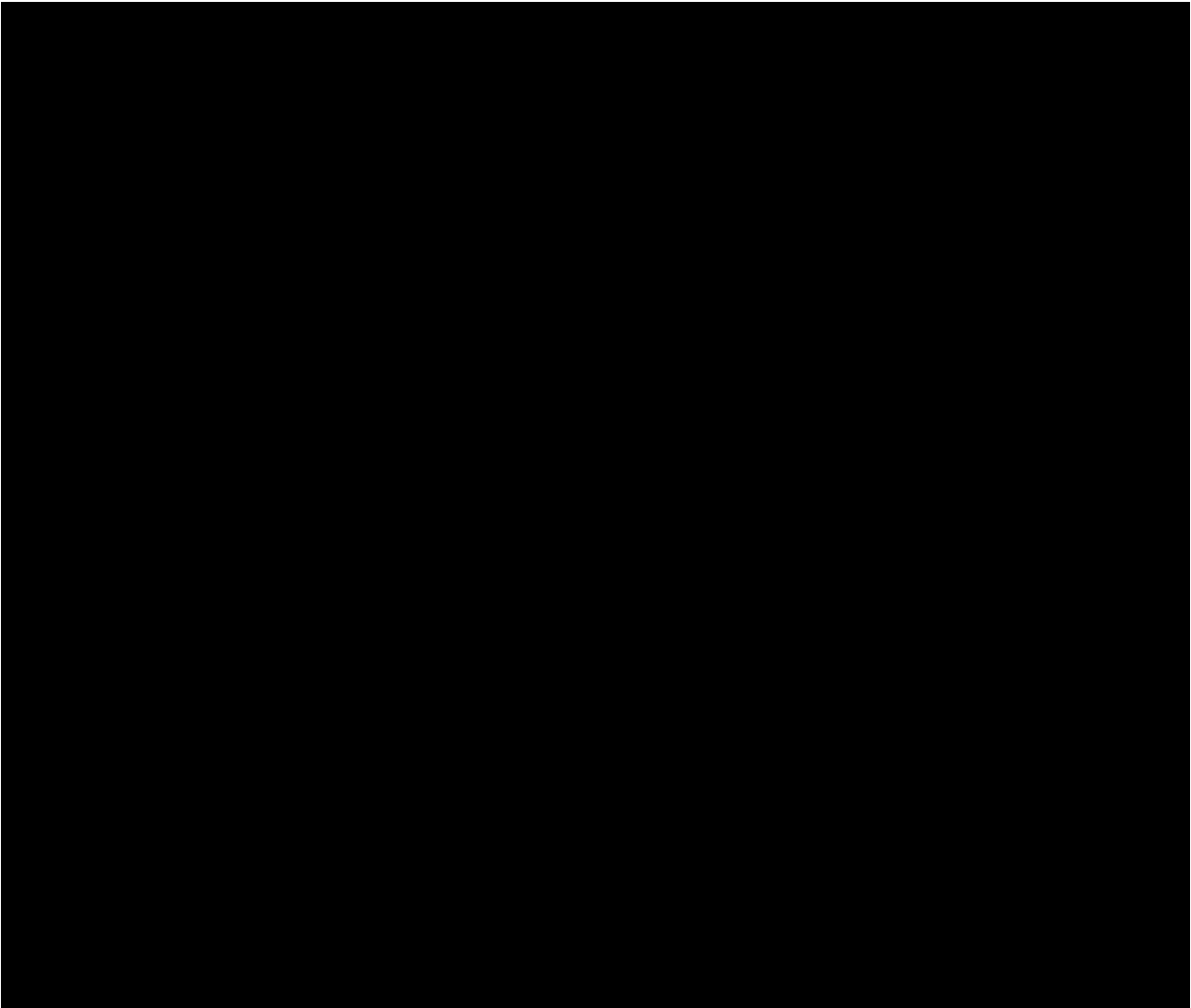
(27)   In Figure 2 below, I reproduce Dr. Eisenach's Figure 7, based on the data provided by Spotify to the
         MLC, to examine movement in sound recording rates and musical works rates over the relevant
         period.[52] I adjust the scale so that one can more easily see the movement in rates.

(28)   Figure 2 ███
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████████████████████████████████████.[53]

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[52]   Dr. Eisenach also relied on data provided by Spotify to the MLC as part of Spotify's initial submission of its Cumulative
       Statement of Account for Making and Distributing Phonorecords in February 2021. ████████████████████████████
       ███.

[53]   ██
       ██ I discuss this issue in more detail in Section V.B
       below. ██
       ██
       ██
       ██ The particular
       musical works rate increase experienced by each service over the course of the Phono III period is a function of their
       service plan types, their customer types, their revenue, and their sound recording contracts. It is not obvious exactly how
       each of these variables will change and thus exactly how much each service's musical works rates will increase over the
       course of the Phono III rates and terms. Nor are the terms and conditions of each of the services' major label contracts
       public. This fact highlights, as I discussed in my direct remand testimony, the difficulty in predicting a nearly one-for-
       one see-saw effect in an environment of asymmetric information where major labels bargain with each service
       sequentially, not knowing the content or the timing of other major label deals, or even necessarily what effective musical
   works rate each service is paying.

Written Supplemental Remand Testimony of Leslie M. Marx, PhD, Docket No. 16-CRB-
0003-PR (2018–2022) (Remand)

(29)   I reproduce Dr. Eisenach's data presentation because Professor Watt uses it to assess the see-saw hypothesis, but as I discussed in Section III above, movements in aggregate effective rates paid by a service over time do not represent direct proof or disproof of the see-saw hypothesis. ██ [54]

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[54]   Dr. Eisenach criticizes my sound recording royalty rate analysis for including data for Q4 2020 because, as he puts it, ██ (call with Spotify licensing finance personnel, 11/12/2021).

Written Supplemental Remand Testimony of Leslie M. Marx, PhD, Docket No. 16-CRB-0003-PR (2018–2022) (Remand)

(30)   Dr. Eisenach uses his Figure 8 to ███████████████████████████████ ████████████████████████ [55] Figure 3 provides the same information in a form that makes it easier to see ████████████████████████████████ ██ ██ ████████████████████████████████ Again, I present these data to provide more clarity on what Dr. Eisenach is actually showing, although aggregate effective rates across all labels do not speak directly to the see-saw hypothesis for the reasons discussed above.
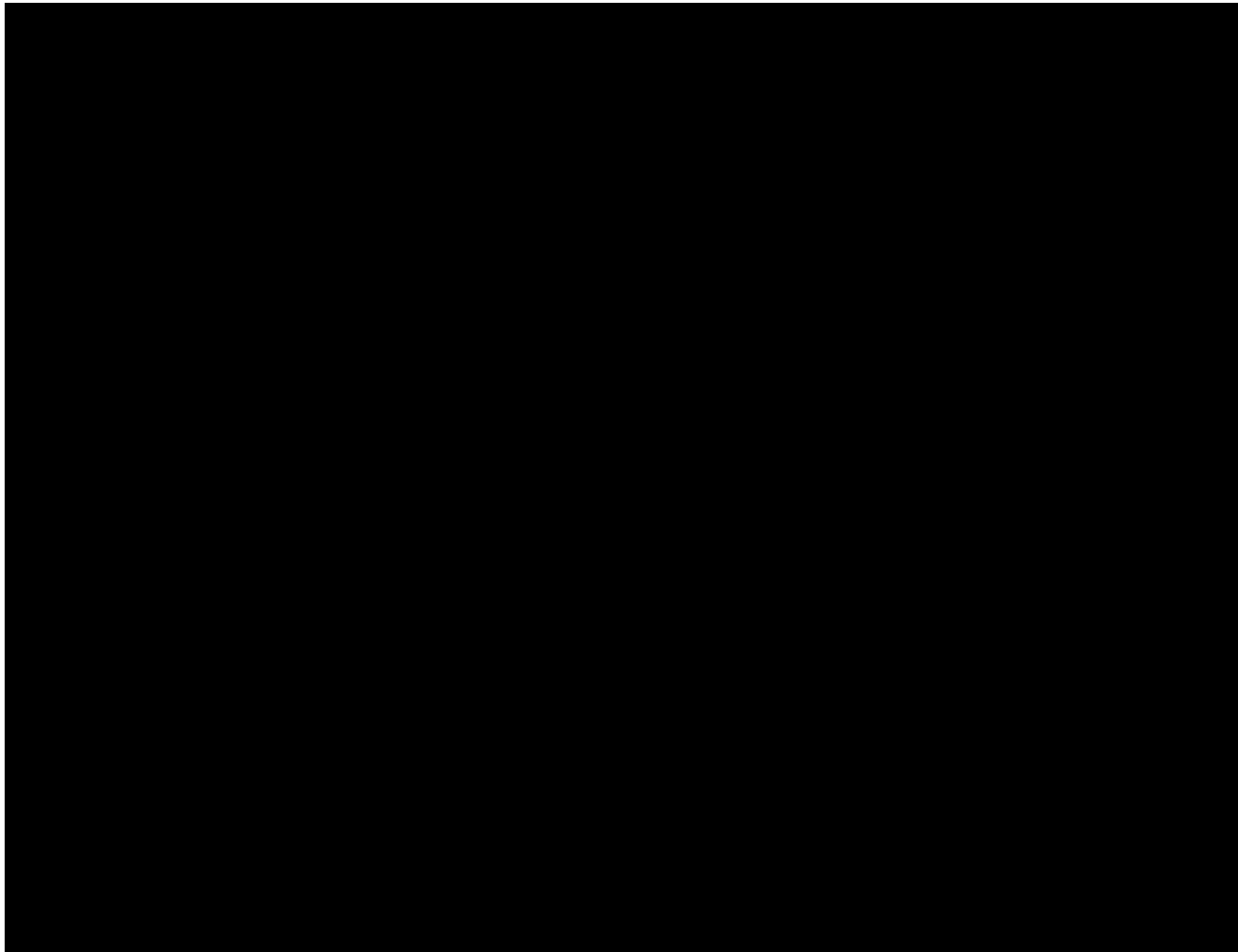
(31)   For these reasons, Dr. Eisenach's empirical analyses of changes in royalty rates over time do not support a significant see-saw effect. If anything, they support the opposite conclusion.

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[55]   Eisenach RWRT, ¶ 36.

V. Dr. Eisenach's analysis of service profitability and the TCC prong as related to Spotify is misleading and ultimately irrelevant

(32)   In addition to his analysis of royalty rate movements, Dr. Eisenach makes two other primary contentions in his rebuttal testimony in the sections that that I understand I am allowed to address in this supplemental testimony.[56] First, he claims that data on revenue and profitability show that the interactive streaming services have not been adversely affected by the Phonorecords III rates.[57] Second, he claims that "[t]he evidence also demonstrates that uniform application of the True TCC rate prong has served its intended purpose by protecting Copyright Owners against revenue diminution and anomalous reporting practices."[58]

(33)   In the course of making these arguments, Dr. Eisenach makes a number of irrelevant or misleading assertions. Below, I discuss these arguments as they relate to Spotify in particular.[59]

V.A. Analysis of profitability

(34)   To support his contention that the services have not been "adversely affected" by the Phonorecords III rates, Dr. Eisenach presents information on Spotify's financial performance in recent years.[60] He first shows in his Figure 11 that Spotify's worldwide annual revenues have grown from $1.085 billion Euros in 2014 to $7.8 billion Euros in 2020. Of course, as streaming has risen in popularity with consumers over the last decade, the revenues of all of the major streaming services have increased.[61] Dr. Eisenach's own calculations show that between ████████ of those revenues, depending on the service and the year, have been passed upstream to sound recording and musical works rightsholders in the form of music royalties.[62]

(35)   Dr. Eisenach, in his Figure 12, also reports Spotify's "gross profit margins" from Q1 2016 to Q3 2020 to support his contention that "Spotify's profitability has also increased under the Phonorecords III rates."[63] Gross profits measure revenue minus direct costs of sales but do not include many of the

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[56]   Dr. Eisenach also makes various claims about Dr. Katz's remand testimony, which I do not address here because they lie outside the bounds of the testimony identified by the Board as addressable in this supplemental testimony.

[57]   Eisenach RWRT, ¶¶ 44–45.

[58]   Eisenach RWRT, ¶ 63.

[59]   As discussed in Section I above, I was asked to limit my supplemental testimony to arguments that apply to all services or that apply to Spotify specifically, and not to respond to arguments that apply only to a service other than Spotify.

[60]   Eisenach RWRT, ¶ 45.

[61]   *See, e.g.,* "U.S. Recorded Music Revenues by Format," U.S. Sales Database, Recording Industry Association of America, accessed November 8, 2021, https://www.riaa.com/u-s-sales-database; Eisenach RWRT, Figures 15, 16.

[62]   Eisenach RWRT, Figures 2, 5, 6, 8.

[63]   Eisenach RWRT, Figure 12, ¶ 47.

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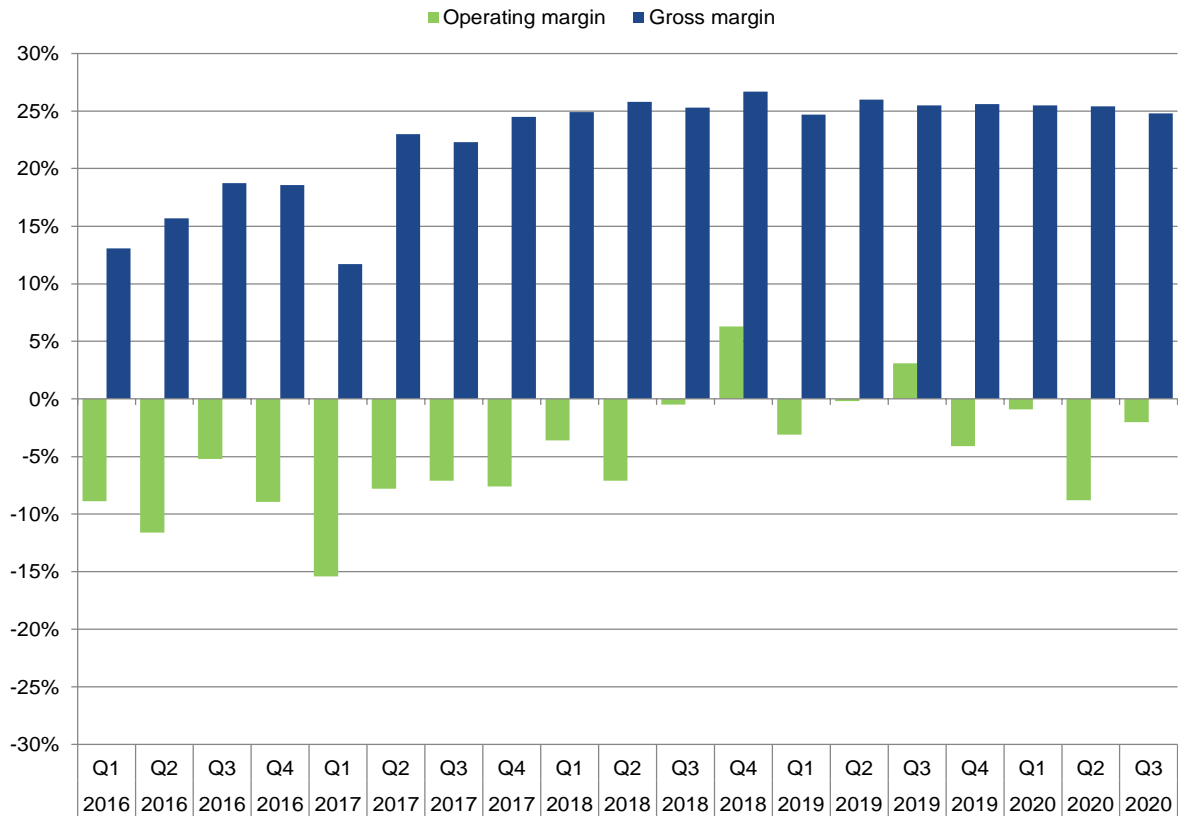
costs of actually running a company.[64] While a positive gross margin thus loosely means that a company does not lose money with each additional unit that it sells, it does not mean that a company is "profitable" as a business.[65] A better measure of overall profitability is a company's "operating margin," which includes Selling, General, and Administrative expenses and Research and Development (R&D) expenses.[66] The source from which Dr. Eisenach draws his Figure 12 also includes Spotify's operating margin—not reported by Dr. Eisenach. In Figure 4 below, I include Spotify's operating margins along with the gross margins reported by Dr. Eisenach, drawn from the same sources. They show that ████████████████████████

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[64] *See* Clyde P. Stickney et al., *Financial Accounting: An Introduction to Concepts, Methods, and Uses* (Mason, OH: South-Western Cengage Learning, 2010), 148 ("Common terminology…often refers to the difference between sales and cost of sales as gross margin, gross profit, or gross income."). The marketing and R&D expenditures excluded by Dr. Eisenach help grow revenue for the industry to the benefit of both the copyright owners and Spotify.

[65] *See* Clyde P. Stickney et al., *Financial Accounting: An Introduction to Concepts, Methods, and Uses* (Mason, OH: South-Western Cengage Learning, 2010), 145 ("Users of financial statements analyze *net income* because it is a summary financial measure of how well a firm transforms efforts (expenses) into salable output (revenues), with larger net income indicating better performance.") (emphasis added).

[66] *See* Clyde P. Stickney et al., *Financial Accounting: An Introduction to Concepts, Methods, and Uses* (Mason, OH: South-Western Cengage Learning, 2010), 149 ("Many firms present a subtotal called operating income or operating profit, the difference between revenues and expenses associated with core operating activities… In addition to cost of sales, two common types of operating expenses are selling, general, and administrative expenses (SG&A) and research and development expenses (R&D).").

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Figure 4. Spotify gross profit and operating margins (Q1 2016–Q3 2020)

Source: Eisenach RWRT, CO Rem. Ex. J and W.

V.B. Assertions regarding the need for an uncapped TCC prong

(36) Dr. Eisenach reports that "the evidence demonstrates that the True TCC rate prong has served its intended purpose by protecting Copyright Owners against the Services' revenue diminution strategies and as well as from apparently anomalous reporting practices."[67] The "evidence" that he presents on this point with regard to Spotify has nothing to do with revenue diminution strategies or anomalous reporting practices and thus says nothing in particular about the value of an uncapped TCC prong.[68]

(37) Dr. Eisenach first asserts that Spotify "has prioritized gaining market share and engages in substantial discounting, which leads to low revenue per subscriber."[69] The only cite that he gives for this claim is an earnings call statement that does not say anything about prioritizing gaining market share or engaging in substantial discounting, but instead speaks to Spotify's focus on attracting artists to its

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[67] Eisenach RWRT, ¶ 68.

[68] And, in any case, a capped TCC prong provides copyright owners with protection from these concerns as well.

[69] Eisenach RWRT, ¶ 82.

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platform, and how its long-term success depends on "growing the number of creators on our platform
. . . using our promotion, marketing, and career management tools."[70] While Spotify engages in
discounting in the form of student and family plans, as well as by offering a free, ad-supported service
directed at low willingness-to-pay customers, these are forms of price discrimination that benefit the
industry as a whole, including copyright owners, as I discussed at length in my written direct
testimony in this proceeding.[71] Indeed, facilitating price discrimination was, as I understand it, one of
the main objectives of the Phono III rate structure as articulated in the Majority opinion:

> The Judges find that the objective of maximizing the availability of musical works
> *downstream* to the public is furthered by an *upstream* rate structure that enhances the
> ability of the interactive streaming services to engage in *downstream* price
> discrimination ("down the demand curve," increasing revenue for both Copyright
> Owners and the interactive streaming services).[72]

(38)   The change in how student and family plans were treated under Phono III—allowing a family plan to
count as 1.5 subscribers and a student plan as 0.5 subscribers—was explicitly motivated by this price
discrimination rationale.[73] It meant that student and family plans, for ███████████████

██

██

████████████████████████████████████.[74] Figure 5
shows the effective mechanical royalty rates implied by the mechanical floors under Phono II and
Phono III rates. The effective percentage of revenue implied by the mechanical floor was ███

██
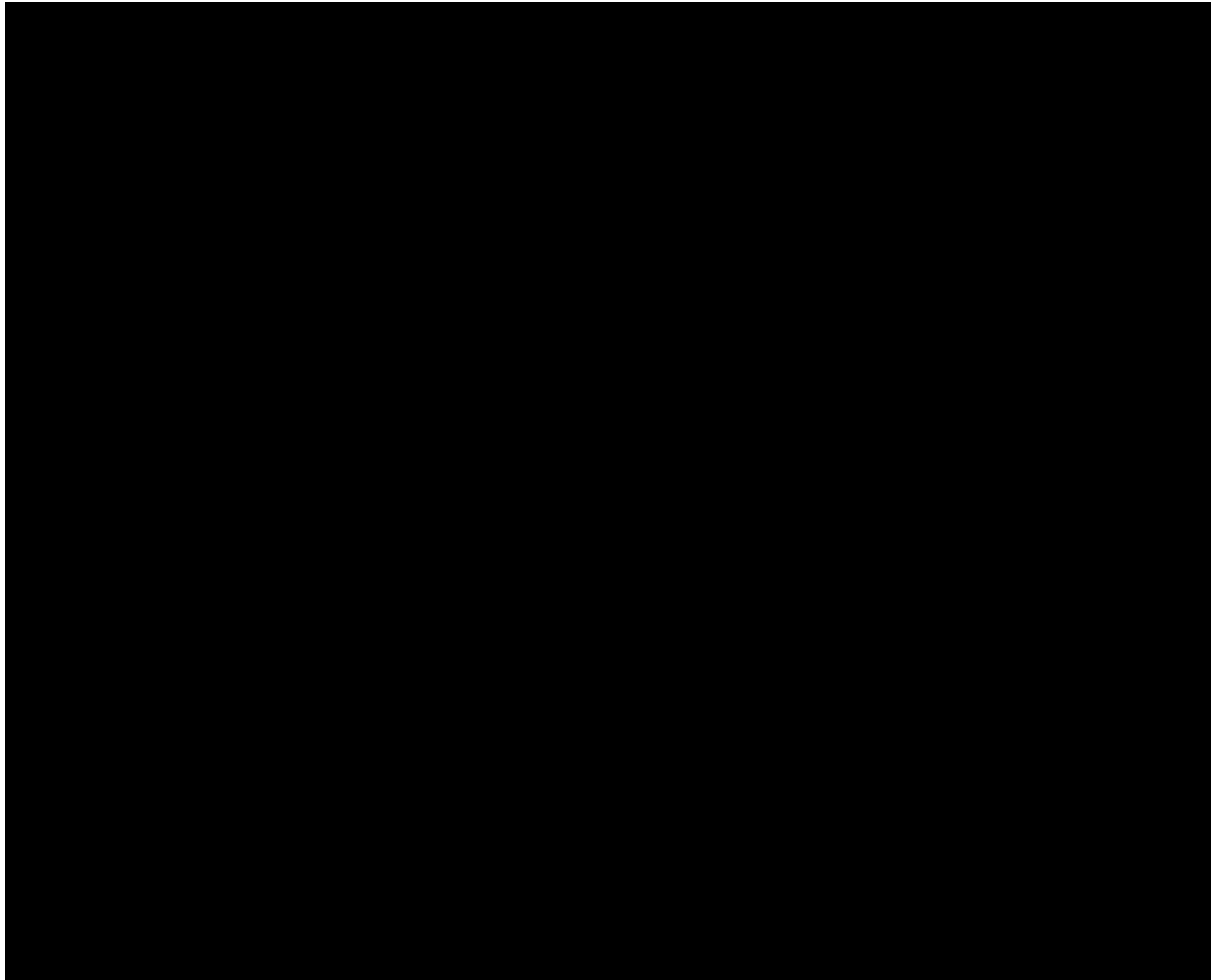
████████████████████████████

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70   Eisenach RWRT, at fn. 101; CO Rem. Ex. I, at 4.

71   *See, e.g.,* Marx WDT, ¶ 116–133.

72   Phono III Final Determination, at 85.

73   Phono III Final Determination, at 90 ("But the Judges also recognize that marketing reduced rate subscriptions to
families and students is aimed at monetizing a segment of the market with a low WTP (or ability to pay) that might not
otherwise subscribe at all. The Services, as they work toward profitability, are likely to continue to market aggressively
to users with the WTP full subscription prices and to monetize other users in hopes of getting them into the "funnel" for
full-price subscriptions.").

74   ██

██

████████████████████ *See, e.g.*, "Go Premium. Be Happy," Spotify, updated January 1, 2018,
https://web.archive.org/web/20180101234333/https://www.spotify.com/us/premium/; "Premium for Family," Spotify,
updated March 16, 2018, https://web.archive.org/web/20180316075600/https://www.spotify.com/us/family/; "Spotify
Premium for Students, Now with Hulu.," Spotify, updated January 12, 2018,
https://web.archive.org/web/20180112050723/https://www.spotify.com/us/student/.

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(39)   Dr. Eisenach's discussion of this point (and his discussion of Spotify's reporting of subscriber counts) simply notes the difference in the treatment of mechanical floors for student and family plans across the two regimes, and shows that it meant a ████████████████████████████ ███████████████████████████[75] Again, that was an intended feature of the Phonorecords III rate structure to facilitate certain types of price discrimination. It has nothing to do with the value of an uncapped (or capped) TCC prong, nor does it provide any evidence of "revenue diminution" strategies or "anomalous reporting practices" on the part of Spotify. As Dr. Eisenach's own data show, ██ ██[76]

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[75] Eisenach RWRT, ¶¶ 82–84.

[76] *See, e.g.,* Eisenach RWRT, Figures 7 and 8.

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(40)   Dr. Eisenach also notes the ███████████████████████████████████████
███████████████████████████████████████.[77] Under the Phono II regulations, bundled
service revenue was defined as the difference between "the revenue recognized from end users for the
bundle less the standalone published price for end users for each of the other component(s) of the
bundle."[78] Under the now-vacated Phono III regulations, bundled service revenue was redefined as
"the lesser of the revenue recognized from End Users for the bundle and the aggregate standalone
prices for End Users for each of the component(s) of the bundle that are licensed activities."[79] ████
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(41)   In sum, Spotify's actions under the new Phono III treatment of family and student plans and bundled
revenue do not support Dr. Eisenach's claims regarding "the Services' revenue diminution strategies"
or "apparently anomalous reporting practices."[80] Nor do they provide evidence that "[t]he True TCC
Rate Prong Has Served Its Intended Purpose by Protecting Against Revenue Diminution and Possibly
Anomalous Reporting Practices," as Dr. Eisenach's heading for a section of his report claims.[81]
Instead, they show Spotify complying with changing regulations, with predictable impacts on its
reporting of subscribers and bundled revenue.

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[77]   Eisenach RWRT, ¶¶ 85–88.

[78]   Title 37 - Patents, Trademarks, and Copyrights, 17 U.S.C. § 114 and 115 (2009) ("Where the licensed activity is
provided to end users as part of the same transaction with one or more other products or services that are not a music
service engaged in licensed activity, then the revenue deemed to be recognized from end users for the service for the
purpose of the definition in paragraph (1) of the definition of ''Service revenue'' shall be the revenue recognized from
end users for the bundle less the standalone published price for end users for each of the other component(s) of the
bundle; provided that, if there is no such standalone published price for a component of the bundle, then the average
standalone published price for end users for the most closely comparable product or service in the U.S. shall be used or,
if more than on such comparable exists, the average of such standalone prices for such comparables shall be used.").

[79]   Phono III Final Determination, Attachment A, at 8. If there is no standalone published price for a component of the
bundle, "then the Service shall use the average standalone published price for End Users for the most closely
comparable product or service in the U.S. or, if more than one comparable exists, the average of the standalone prices
for comparables."
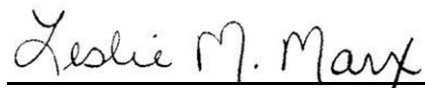
[80]   Eisenach RWRT, ¶ 82.

[81]   Eisenach RWRT, ¶ 45.

Written Supplemental Remand Testimony of Leslie M. Marx, PhD, Docket No. 16-CRB-
0003-PR (2018–2022) (Remand)

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
The Library of Congress

In the Matter of	**Docket No. 16–CRB–0003–PR (2018–2022) (Remand)**
DETERMINATION OF RATES AND TERMS FOR MAKING AND DISTRIBUTING PHONORECORDS (PHONORECORDS III)	

DECLARATION OF LESLIE M. MARX

I, Leslie M. Marx, declare under penalty of perjury that the statements contained in my Written Supplemental Remand Testimony in the above-captioned proceeding are true and correct to the best of my knowledge, information, and belief. Executed this 15th day of November 2021 in Durham, North Carolina.

Leslie M. Marx

Leslie M. Marx

Appendix A. Materials relied upon

A.1. Academic

- Admati, Anat R., and Motty Perry. "Strategic Delay in Bargaining." *Review of Economic Studies* 54, no. 3 (1987): 345–64.

- Akerlof, George. "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism." *Quarterly Journal of Economics* 84, no. 3, (August 1970): 488–500.

- Chatterjee, Kalyan, and William Samuelson. "Bargaining under Incomplete Information." *Operations Research* 31, no. 5 (1983): 835–51.

- Cramton, Peter C. "Strategic Delay in Bargaining with Two-Sided Uncertainty." *Review of Economic Studies* 59, no. 1 (1992): 205–25.

- Kennan, John, and Robert Wilson. "Bargaining with Private Information." *Journal of Economic Literature* 31, no. 1 (1993): 45–104.

- Krishna, Vijay. *Auction Theory*. 2nd ed. Burlington, MA: Academic Press/Elsevier, 2010.

- Loertscher, Simon, and Leslie M. Marx. "Incomplete Information Bargaining with Applications to Mergers, Investment, and Vertical Integration." *American Economic Review*. Forthcoming.

- Myerson, Roger B., and Mark A. Satterthwaite. "Efficient Mechanisms for Bilateral Trading." *Journal of Economic Theory* 29, no. 2 (1983): 265–81.

- Satterthwaite, Mark A., and Steven R. Williams. "Bilateral Trade with the Sealed Bid k-Double Auction: Existence and Efficiency." *Journal of Economic Theory* 48 (1989): 107–33.

- Stickney, Clyde P., Roman L. Weil, Katherine Schipper, and Jennifer Francis. *Financial Accounting: An Introduction to Concepts, Methods, and Uses*. Mason, OH: South-Western Cengage Learning, 2010.

- Williams, Steven R. "Efficient Performance in Two Agent Bargaining." *Journal of Economic Theory* 41 (1987): 154–72.

A.2. Discovery

- Remand Written Rebuttal Testimony of Daniel F. Spulber, Ph.D., July 2, 2021.

- Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, Ph.D., July 2,2021.

Written Supplemental Remand Testimony of Leslie M. Marx, PhD, Docket No. 16-CRB-0003-PR (2018–2022) (Remand)

- Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, Ph.D., July 2, 2021, CO Rem. Ex. I.

- Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, Ph.D., July 2, 2021, CO Rem. Ex. J.

- Remand Written Rebuttal Testimony of Jeffrey A. Eisenach, Ph.D., July 2, 2021, CO Rem. Ex. W.

- Remand Written Rebuttal Testimony of Richard Watt (PhD), July 2, 2021.

- Written Direct Remand Testimony of Leslie M. Marx, PhD, April 1, 2021.

- Written Direct Testimony of Christopher Bonavia, March 31, 2021.

- Written Direct Testimony of Leslie Marx, PhD, November 1, 2016.

- Written Rebuttal Testimony of Richard Watt (Ph.D.), February 13, 2017.

- Written Rebuttal Testimony of Richard Watt (Ph.D.), February 13, 2017, Appendix 3 (CO EX. R-110).

A.3. Legal

- Final Determination, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, No. 16-CRB-0003-PR (CRB November 5, 2018).

- Initial Determination, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, No. 16-CRB-0003-PR (CRB, January 26, 2018).

- Order Denying in Part and Granting in Part Services' Motion to Strike Copyright Owners' Expert Testimony and Granting Services' Request to File Supplemental Testimony and Briefing, *Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)*, No. 16-CRB-0003-PR (CRB October 1, 2021).

A.4. Public

- "Go Premium. Be Happy." Spotify. Updated January 1, 2018. https://web.archive.org/web/20180101234333/https://www.spotify.com/us/premium/.

- National Music Publishers' Association. "CRB Dramatically Increases Rates for Songwriters." January 27, 2018. https://www.nmpa.org/crb-dramatically-increases-rates-for-songwriters/.

- "Premium for Family." Spotify. Updated March 16, 2018. https://web.archive.org/web/20180316075600/https://www.spotify.com/us/family/.

- Recording Industry Association of America. "U.S. Recorded Music Revenues by Format." U.S. Sales Database. Accessed November 8, 2021. https://www.riaa.com/u-s-sales-database.

- "Spotify Premium for Students, Now with Hulu." Spotify. Updated January 12, 2018. https://web.archive.org/web/20180112050723/https://www.spotify.com/us/student/.

- Title 37 - Patents, Trademarks, and Copyrights, 17 U.S.C. § 114 and 115 (2009).

Proof of Delivery

I hereby certify that on Monday, November 15, 2021, I provided a true and correct copy of the Written Supplemental Remand Testimony of Leslie M. Marx, PHD to the following:

Pandora Media, LLC, represented by Benjamin E. Marks, served via ESERVICE at benjamin.marks@weil.com

Google LLC, represented by David P Mattern, served via ESERVICE at dmattern@kslaw.com

Nashville Songwriters Association International, represented by Benjamin K Semel, served via ESERVICE at Bsemel@pryorcashman.com

National Music Publishers' Association (NMPA) et al, represented by Benjamin Semel, served via ESERVICE at Bsemel@pryorcashman.com

Amazon.com Services LLC, represented by Scott Angstreich, served via ESERVICE at sangstreich@kellogghansen.com

Johnson, George, represented by George D Johnson, served via ESERVICE at george@georgejohnson.com

Signed: /s/ Richard M Assmus