Identifying an "Effectively Competitive" Market: The Work of the Copyright Royalty Board

*The Hon. David R. Strickler**

ABSTRACT

The United States Copyright Royalty Board ("CRB") establishes royalty rates for compulsory statutory licenses of sound recordings paid by Webcaster licensees to sound recording companies. These rates are set by the government, rather than the market, because the licensed sound recordings are not simply individual copies of discrete sound recordings in competition with each other, but rather are collections of repertoires offered under a blanket license by the major record companies and one independent consortium—who control the vast majority of recordings.

Accordingly, coexisting with the efficiencies of collective ownership is the market power of these collectives. Absent a regulatory rate, the collectives, "complementary oligopolies," can exploit the "Must Have" (essential) nature of their blanket licenses by setting non-competitive royalty rates. When rates are not "effectively competitive," the market is beset by inefficient and exploitive pricing.

It is for this reason that many collective licensors are subject to royalty rate regulation. The fact that unregulated copyright collectives may not achieve an economic optimum establishes the strong theoretical foundation for the regulation of such collectives.

The CRB's three-judge panel is required by statute to "establish rates . . . that would have been negotiated in the marketplace between a willing buyer and a willing seller."[1] To accomplish this economic task, the Judges preside over adversarial trial proceedings between licensors and licensees.

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1. 17 U.S.C. § 114(f)(1)(B).

Because the statutes supplant the actual market, the CRB Judges must establish a "hypothetical market" that satisfies the statutory standard. A critical element in that regard is the testimony of the parties' economists, which consists of various forms of economic modeling. The experts who proffer such testimony are typically well-credentialed economists who have been, inter alia, the highest-ranking economists at the Antitrust Division of the U.S. Department of Justice and distinguished professors of microeconomics and industrial organization. Their direct oral and written testimonies, akin to expert reports, are subject to adverse expert rebuttals, examination by skilled counsel, and inquiries from the Judges, one of whom (the author of this Article), by statute, "shall have significant knowledge of economics."[2]

This Article focuses on a seminal opinion by the CRB Judges, affirmed by the D.C. Circuit: the Web IV Determination holding that the statutory "willing buyer-willing seller marketplace" standard shall reflect the workings of an "effectively competitive" market.[3] *In all subsequent CRB royalty rate setting determinations, the Judges have applied this "effective competition" standard to the particular facts of the case.*

INTRODUCTION

It is perilous to begin an Article in a legal journal on a topic within the field of law and economics by jumping straightaway into the *specific* economics of the matter. Better to start by noting a vital and basic point: *Economists' opinions presented in legal proceedings (as elsewhere) are typically in the form and context of economic models.*[4] Such evidence is proffered by highly-qualified experts—whose opinions widely diverge. How can that be? After all, many economists maintain that economics is a discipline at least analogous to an objective hard science.[5]

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2. 17 U.S.C. § 802(a)(1).

3. Determination of Royalty Rates and Terms for Ephemeral Recording and Webcasting Digital Performance of Sound Recordings (Web IV), 81 Fed. Reg. 26316 (May 2, 2016), *aff'd sub nom.* SoundExchange, Inc. v. Copyright Royalty Bd., 904 F.3d 41 (D.C. Cir. 2018) [hereinafter, Web IV Final Determination]. Portions of this Article draw directly from the Web IV Determination, which the Author co-authored in his capacity as a Judge of the CRB. These excerpts are incorporated to present the original legal and economic analysis and reasoning reflected in the opinion.

4. One of the most prominent economists of the twentieth century, John Maynard Keynes, who advocated for government involvement to address marketplace deficiencies, wrote that "[e]conomics is a science of thinking in terms of models joined to the art of choosing models which are relevant. . . ." JOHN MAYNARD KEYNES, *The General Theory and After: Part II—Defence and Development, in* XIV THE COLLECTED WRITINGS OF JOHN MAYNARD KEYNES 296 (Donald Moggridge ed., 2013). An equally prominent twentieth century economist, Milton Friedman, although an advocate of the contrary *laissez-faire* perspective, likewise said of economic models: "[T]o use effectively these abstract models . . . we must have a comparable exploration of the criteria for determining what abstract model it is best to use . . . and what features . . . have the greatest effect on the accuracy of the predictions yielded by a particular model. . . ." MILTON FRIEDMAN, ESSAYS IN POSITIVE ECONOMICS 42 (1953).

5. *See, e.g.*, LIONEL ROBBINS, AN ESSAY ON THE NATURE AND SIGNIFICANCE OF ECONOMIC SCIENCE 15 (1932) (describing the theoretical branch of economics as "the science which studies human behavior as a relationship between ends and scarce means which have alternative uses"). *Cf.* DAVID COLANDER & CRAIG FREEDMAN, WHERE ECONOMICS WENT WRONG: CHICAGO'S ABANDONMENT OF CLASSICAL LIBERALISM 3–4 (2019) ("Most classical economists accepted there was a scientific branch of economics. . . . In the 1930s, the economics profession began . . . removing the firewall between economic science and policy.").

One could adopt a cynical mindset and chalk up the divergence to the "hired gun" nature of expert testimony.[6] However, a question logically arises: How and why could such striking disputes exist when economists apply what are the teachings of an essentially objective science? That is, would not the economic expert who misapplies objective truth risk reputational damage—if not ruin—for the heresy of misstating scientific fact?[7]

Here is the answer to the above question as set forth by the Judges in their Web IV Determination:

> The rates proposed by the [Webcasting] Services and SoundExchange [the record company collective] are marked by a wide disparity. Although it is unsurprising that adverse parties would have strikingly different positions, what is surprising is that, despite these differences, the parties' positions are supported to a great extent (but not in all cases) by persuasive and logical economic analyses. Initially, this created a conundrum for the Judges, because none of these persuasive and logical economic analyses could easily be rejected.
>
> On closer inspection, however, what became clear to the Judges was that the reason why many of these disparate economic analyses and models could all appear to be correct was that they each reflected *only a portion of the marketplace*.[8]

The Judges then explained—quoting a prominent economist—how this phenomenon among experts has *particular applicability in economics*:

> Rather than a single, specific model, economics encompasses a collection of models. . . . The diversity of models in economics is the necessary counterpart to the flexibility of the social world. Different social settings require different models. Economists are unlikely ever to uncover universal, general-purpose models. But . . . [economists] have a tendency to misuse their models. They are prone to mistake a model for *the* model, relevant and applicable under all conditions. Economists must overcome this temptation.[9]

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6. *See* Richard Posner, *The Law and Economics of the Economic Expert Witness*, 13 J. ECON. PERSPECTIVES 91, 93 (1999) (identifying (and critiquing) the major recurring criticism that "expert witnesses paid by the respective parties are bound to be partisans ('hired guns') rather than being disinterested, and hence presumptively truthful, or at least honest, witnesses").

7. *See id.* at 93, 96 (explaining why concern over "excessive partisanship[] does not seem [a] very grave [concern] with respect to economic witnesses when they are testifying in areas in which there is a substantial professional consensus" but "is most problematic . . . in the areas of economics in which there is no professional consensus.").

8. Web IV Final Determination, *supra* note 3 at 26334 (drawing on Michael Risinger, *Preliminary Thoughts on a Functional Taxonomy of Expertise for the Post-Kumho World*, 31 SETON HALL L. REV. 508, 508–09 (2000) ("[M]any of the problems that the law has had in handling expertise in the courtroom have sprung from a failure to examine the concept of expertise in appropriate taxonomic detail.")).

9. *Id.* (quoting DANI RODRIK, ECONOMICS RULES: THE RIGHTS AND WRONGS OF THE DISMAL SCIENCE 11 (2015)). The alert reader will note that Professor Rodrik referenced the "flexibility" of the *social* world as a reason for the "diversity" of *economic* models. Query whether this challenges any assumption that economics is more in the nature of a "*hard*" science than a "*social*" science.

This point is instructive for the reader—and always a useful reminder for the Judges—that the disparities and divergences among testifying economists usually cannot merely be waived away as a product of the ethos of the "hired gun," but rather may be the consequence of the experts' honest—but differing—assumptions as to how the relevant market works.[10]

I. WEB IV

On January 3, 2015, the Judges commenced Web IV, the rate-setting proceeding for statutory noninteractive webcasters for the five-year 2016–2020 rate period, which was the fourth such five-year period for which such rates were being established.

The statutory compulsory licenses at issue in *Web IV* related to the public performance of copyrighted sound recordings, including by *commercial* noninteractive webcasting, which is the specific subject of this Article.[11] In particular, webcasters are entitled to perform sound recordings without negotiating individual licenses from copyright owners, provided they pay the statutory royalty rates for the performance of the sound recordings (and for the ephemeral copy of the sound recording) necessary to transmit them.[12] The licensee webcasters pay the royalties to a designated collective, SoundExchange, which in turn distributes the royalty funds to copyright owners.

Of particular importance for this Article, the applicable statute requires that the Judges "shall establish rates and terms that most clearly represent the rates and terms that would have been negotiated in the marketplace between a willing buyer and a willing seller."[13] This statutory standard is commonly referred to in shorthand as the "willing buyer/willing seller marketplace standard."

To provide a sense of the complexity and detail of these rate proceedings, the hearing in Web IV began on April 27, 2015, concluding on June 3, 2015.[14] The Judges heard oral testimony from 47 witnesses, including 16 experts, and admitted 660 exhibits into evidence, comprising over 12,000 pages of documents.[15] After the Judges closed the evidentiary record, the parties submitted required written proposed findings of fact

10. Closely related to the issues of divergent assumptions and models are the selection and application of more general microeconomic principles—in the particular world of intellectual property goods and, for present purposes, in the setting of royalty rates. To that end, this Author's Dissent in the 2019 Phonorecords III Determination sets forth an extended overview of the relevant microeconomic principles. *See* Determination of Royalty Rates and Terms for Making and Distributing Phonorecords, 84 Fed. Reg. 1918 (Feb. 5, 2019) (Strickler, J., dissenting) [hereinafter, "Phonorecords III"].

11. *See* 17 U.S.C. §§ 106(6), 114(d).

12. 17 U.S.C §§ 114(f), 112(e). The "ephemeral license" refers to the statutory compulsory license required to enable the webcaster to make the public transmission of sound recordings to its customers. *See* 17 U.S.C. § 112(e). In Web IV, as in other rate proceedings, the rate for this ephemeral license was set as 5% of whatever royalty revenue is attributable to the § 114 public performance license, on the economic basis that the § 112 ephemeral license, for webcasters, is a necessary "complement" to the § 114 license (i.e., in this context, neither license has any marketplace value in the absence of the other).

13. 17 U.S.C. § 114(f)(2)(B).

14. Web IV Final Determination, *supra* note 3, at 26317.

15. *Id.*

and conclusions of law (and responses thereto).[16] Thereafter, the parties made oral closing arguments to the Judges.[17]

To elucidate the application of economics principles in this proceeding, this Article focuses on the economic facts and arguments proffered by Pandora Media, Inc. ("Pandora") and to a lesser extent by iHeartMedia, Inc. ("iHeart") for the webcasters, and SoundExchange, Inc. ("SoundExchange") for the sound recording licensors, i.e., the record companies and the sound recording artists.

Before tackling the economic opinions and associated evidence and testimony, it is helpful to address the legal issue the Judges needed to address in their Determination: whether the applicable law should be understood to require that royalty rates be set consistent with those that would arise in an "effectively competitive market."

A. EFFECTIVE COMPETITION AS A LEGAL STANDARD

The CRB Judges set forth several reasons in support of their legal conclusion that the Copyright Act requires them to set royalty rates that would be generated by a market that was "effectively competitive." First, the Judges noted that the D.C. Circuit and the Librarian of Congress had acknowledged that the Judges can and should determine whether the proffered rates reflect a sufficiently competitive market.[18]

Second, the Judges ascertained that the relevant legislative history supports the conclusion that section 114 directs them to set rates reflecting the workings of an effectively competitive market. That is, the legislative history equates rates set under the willing buyer/willing seller standard with reasonable rates, which have been construed by the rate court,[19] in an analogous context, as "rates that would be set in a competitive market."[20]

Third, the Judges were informed by the analogous use of the willing buyer/willing seller standard in eminent domain law.[21] In such cases, the courts must consider whether to award a forced seller the "holdout" value of the seller's parcel, an additional value that exists solely because the seller's property is a necessary *complement* to the other properties that are needed by the governmental unit. The Judges found that it is precisely this *complementary oligopoly premium* that the Judges must exclude in the

16. *Id.*

17. *Id.*

18. *Id.* at 26373.

19. The "rate court" is shorthand for the jurisdiction of the U.S. District Court for the Southern District of New York to adjudicate rate disputes between American Society of Composers, Authors, and Publishers ("ASCAP") or Broadcast Music, Inc. ("BMI"), respectively, and potential licensees of public performance rights for the musical works embodied in sound recordings—but not licenses for the sound recordings themselves. (This procedure was established in antitrust consent decrees entered into between the Department of Justice and, respectively, ASCAP and BMI.)

20. Web IV Final Determination, *supra* note 3, at 26331–32.

21. *See, e.g.*, Kirby Forest Ind., Inc. v. U.S., 467 U.S. 1, 10 (1984) (applying the willing buyer/willing seller test in an eminent domain valuation dispute).

statutory rate based upon their analyses of the parties' benchmarks proffered in this proceeding.[22]

Fourth, the Judges were also persuaded that the statutory structure regarding the sound recording performance right—as it relates to terrestrial radio, noninteractive services, and interactive services—confirms the necessity of adopting an "effectively competitive" standard in the rate-setting process.[23] Copyright owners were provided a limited performance right with regard to the use of their sound recordings by noninteractive services—something less than the purely private market-based rate for interactive use, but clearly more than the "zero rate" required from terrestrial radio.[24] The Judges concluded that a rate simply reflective of either polar extreme would be inconsistent with the tripartite statutory structure.[25] Further, even though the § 114 language refers to a "marketplace" standard," the Judges concluded that did not require them to import the (anti)competitive dynamics of the interactive market, which, although a potential *benchmark* market, was not the *same* market as the hypothetical noninteractive market they were required to construct in the rate-setting process.[26]

SoundExchange raised several objections to the interpretation of the section 114 "willing buyer/willing seller marketplace standard" as supporting an application of an "effective competition" standard. SoundExchange asserted a conceptual criticism that an "effective competition" standard is deficient because there is no pre-existing "bright line" test sufficient to distinguish a rate which is "effectively competitive" from one that is not.[27] In rejecting this criticism, the Judges noted that "[t]he very essence of a competitive standard is that it suggests a continuum and differences in degree rather

22. *See* Web IV Final Determination, *supra* note 3, at 26342 (explaining that "complementary oligopolists"—identified by economists as providing "Cournot Complements"—are suppliers of "must have" (essential) products, selling "complements, not substitutes, because buyers need each of them and cannot substitute one for another . . . [F]irms offering complementary products tend to set higher prices than would even a monopoly seller of the same products, illustrating that suppliers of complements do not compete with one another."); *see also* Thomas Miceli & C.F. Sirmans, *The Holdout Problem, Urban Sprawl and Eminent Domain*, 16 J. HOUS. ECON. 309, 314 (2007) ("*complementarities* among properties in the assembly case that are not present in the individual transaction" are the consequence of "market failure," economic "rent seeking" and generate inefficient "transaction costs").

23. Web IV Final Determination, *supra* note 3, at 26334.

24. There is no statutory license in interactive markets (i.e., for "on demand streaming services") with regard to their licensing of sound recordings. Therefore, for example, Spotify must negotiate in the market for a license to stream, for its on-demand service, Sony's sound recordings, at a royalty rate to which both parties agree, or else Spotify will not be able to provide its listeners with access to Sony-owned sound recordings. With regard to terrestrial (i.e., AM/FM radio), the Copyright Act does not provide sound recording owners with a public performance right, and therefore radio stations in the United States (unlike radio stations in other countries) can broadcast sound recordings—as no royalty payment is required. (A detailed discussion of the histories and purported rationales for these inconsistent approaches is beyond the scope of this Article.)

25. Web IV Final Determination, *supra* note 3, at 26334 (citing WILLIAM W. FISHER III, PROMISES TO KEEP: TECHNOLOGY, LAW, AND THE FUTURE OF ENTERTAINMENT 104–05 (2004) (explaining that different statutory treatment of terrestrial radio, interactive services, and noninteractive services was based upon the fundamental ability and limits regarding the performance, promotion of, and substitution for sound recordings)).

26. The benchmark proffered by SoundExchange was the interactive market, as discussed *infra*.

27. Web IV Final Determination, *supra* note 3, at 26332.

than in kind,"[28] indicating the existence of factual distinctions across different markets, and across time within markets.[29] And, because the statutory charge requires the Judges to weigh "competitive information," they are thus "empowered to make judgments and decide whether the rates proposed adequately provide for an effective level of competition."[30] Moreover, in the present case, the Judges were presented with "highly specific facts" by which to address and apply the "effective competition" standard.[31]

B. THE TRIAL

At its core, the heavyweight economic dispute in this contest was an important disagreement regarding how to apply two different economic models, which reflected different but not generally inconsistent fundamental economic principles. In one corner was the economic argument made on behalf of SoundExchange. Through its principal expert, Professor Daniel Rubinfeld,[32] SoundExchange proffered a "ratio equivalency" model, which, as SoundExchange explained, embodies a basic principle of "profit maximiz[ing]" behavior that occurs in any marketplace, and which supported its argument that the interactive benchmark rate was "effectively competitive."[33] In the other corner was Pandora's principal expert, Professor Carl Shapiro,[34] who proffered a "price competition" model—which Pandora maintained was an essential feature of an "effectively competitive" market.[35]

1. SOUND EXCHANGE'S "RATIO EQUIVALENCY" MODEL

SoundExchange proposed the following per-play statutory royalty rates for the 2016–2020 Web IV rate period:[36]

28. *Id.* at 26334.

29. *Id.*

30. *Id.*

31. *Id.* The analysis of and distinction among different factual cases is an essential feature of case-based reasoning. Thus, to make distinctions among markets according to the extent of their competitiveness is a quintessential legal function. Moreover, judges' reliance on the holdings in legal precedents are analogous to economists' reliance on assumptions in models, in that both identify and seek to apply (or reject) inexact but similar fact patterns. *Compare* KARL LLEWELLYN, THE BRAMBLE BUSH 47 (11th ed. 2008) (A "striking problem[]" of the case system is whether cases similar on their facts may nonetheless lead to "a difference in result" and "what difference in their facts . . . has produced that difference in result.") (emphasis omitted) *with* RODRIK, *supra* note 9, at 50 ("Identifying which models to use means parsing and selecting . . . models that seem relevant and helpful . . . while discarding the rest.").

32. Professor Rubinfeld has served as the Deputy Assistant Attorney General for Antitrust in the U.S. Department of Justice.

33. *See* Web IV Final Determination, *supra* note 3, at 26337–38, 26340, 26344–45.

34. Professor Shapiro has served as the Deputy Assistant Attorney General for Economics in the Antitrust Division of the U.S. Department of Justice.

35. *See* Web IV Final Determination, *supra* note 3, at 26341, 26356.

36. *Id.* at 26391. SoundExchange also proposed a percent-of-revenue rate, combining both rate formats in a "greater-of" formulation. The Judges rejected the "greater-of" approach, *id.* at 26325, a ruling that is beyond the scope of this Article.

SoundExchange Proposed Per Performance Rates

Year	Per-Performance Rate
2016	$0.0025
2017	$0.0026
2018	$0.0027
2019	$0.0028
2020	$0.0029

These proposed royalty rates did not distinguish between plays on ad-supported or subscription services, and the proposed 2016 rate alone exceeded the then-existing statutory rate for 2014 set in the prior webcasting proceeding (Web III) of $0.0023 by 8%.[37]

Professor Rubinfeld's model "assumed that the ratio of the average retail subscription price to the per subscriber royalty paid by the licensee to the record label is approximately the same in both interactive and noninteractive markets."[38] He first presented this "ratio equivalency" by the following equation:

$$A/B = C/D$$

Where:
[A] = Avg. Retail Interactive Subscription Price
[B] = Interactive Subscriber Royalty Rate
[C] = Avg. Retail Noninteractive Subscription Price
[D] = Noninteractive Subscriber Royalty Rate

To make the ratios more intuitive by comparing retail price ratios to royalty rate ratios, Professor Rubinfeld then transformed the ratios so that the ratio of numerator:numerator was set equal to the ratio of denominator:denominator,[39] expressed therefore as:

$$A/C= B/D$$[40]

Professor Rubinfeld testified that this "ratio equivalency" assumption is not only important, but indeed *foundational* to his entire analysis.[41] More particularly, Professor

37. Services that only transmitted noninteractive music (pureplay services) paid only $0.00130/play in 2014 and $0.00140 in 2015 pursuant to a settlement that by statute was neither binding nor evidentiary. *See* Notification of Agreements Under the Webcaster Settlement Act of 2009, 74 Fed Reg. 34796, 34799 (July 17, 2009); 17 § U.S.C. 114(f)(5)(C).

38. Web IV Final Determination, *supra* note 3, at 26337 (quoting Testimony of Daniel L. Rubinfeld ¶ 169).

39. The ratios can be transformed this way mathematically. Consider, if A = 20, B = 10, C = 10 and D = 5, A/B = 2 and C/D = 2. Likewise, A/C = 2 and B/D = 2.

40. Web IV Final Determination, *supra* note 3, at 26337–38.

41. *Id.* at 26338.

Rubinfeld testified that a fundamental economic principle underlay his assumed equivalency in these ratios: His "ratio equivalency" model was intended to create a rate whereby every marginal increase in subscription revenue would result in the same increase in royalty revenue, whether that marginal increase in subscription occurred in the interactive market or the noninteractive market.[42] This result, as Professor Rubinfeld explained, reflected an application of rational profit maximizing behavior by a willing seller or licensor, as he explained in his testimony during a colloquy with the Judges:

> [JUDGE STRICKLER]
>
> [T]hat's an application . . . of a fundamental economic process of profit maximization . . . . [The record companies] would want to make sure that the marginal return that they could get in each sector would be equal, because if the marginal return was greater in the interactive space than the noninteractive . . . you would want to continue to pour resources, recordings in this case, into the [interactive] space until that marginal return was equivalent to the return in the noninteractive space. Would that be correct?
>
> [DR. RUBINFELD]
>
> It would. You said that just the way I would like to have said it when I was teaching that subject. Yes, I agree with that.[43]

A useful economic model is enhanced if, in addition to a solid theoretical economic rationale, which Professor Rubinfeld had provided, there is industry evidence of its application in reality. Here, the desire of the record companies to achieve such pricing equivalency was indeed confirmed by a senior Warner executive who testified as follows:

> Our goal, *aspirationally and in actual results*, has been a [REDACTED] percent rev[enue] share in this area generally … So we've been kind of struggling, if you will, to pull these business models up to what we think is *the level of consideration that we find appropriate for essentially all of these music models, which is the* [REDACTED] *range.* So it was a combination of trying to be realistic and make major progress towards *our ultimate goal.*[44]

Accordingly, the Judges found that Professor Rubinfeld's "ratio equivalency" model thus implicitly assumes a 1:1 "opportunity cost" for record companies, whereby, on the margin, a dollar of revenue spent on a subscription to a noninteractive service is a lost

42. *Id.* at 26344.

43. *Id.* (quoting Transcript of Record, Day 9 (May 7, 2015) at 2325); *see also id.* (Testimony of Daniel L. Rubinfeld ¶ 172) ("All else equal, the interactivity adjustment sets statutory rates that represent the same fraction of subscription prices as paid by the on-demand services. . . .").

44. Web IV Final Determination, *supra* note 3, at 26345 (quoting Transcript of Record, Day 27 (June 3, 2015) at 7406) (emphasis added).

opportunity for royalties from a dollar to be spent on a subscription to an interactive service.[45] That is, it is important to the record company to attempt to equalize its return in terms of royalty percentage to avoid incurring an economic loss if a listener switches from an interactive service to a noninteractive service.

For an economic model to be useful to the Judges, it also needs to be supported by data. Professor Rubinfeld utilized the available data to calculate values for A, B, and C, which allowed him to identify a ratio of A/C = 2.0, and use that to calculate the unknown value, i.e., SoundExchange's proposed statutory royalty rate of $0.0025 for 2016.[46]

Importantly, this ratio provides the discount factor that reflects the "interactivity adjustment" to the royalty rate for interactive services, which he then applied to determine his proposed royalty rate for noninteractive services. That is, this ratio equivalency model implicitly makes the "interactivity adjustment" that all parties recognized as necessary to reduce the noninteractive royalty rate below the interactive rate, on the basis of a difference in functionality (i.e., no songs "on demand" in the noninteractive sector).[47]

Now recall the earlier discussion of how economic models are built on assumptions. Is Professor Rubinfeld's 1:1 substitution approach an "assumption" (and the industry's "aspiration") or in the nature of broader economic logic? The answer from the Services was an emphatic – Professor Rubinfeld was making an "assumption." As an iHeart economic witness, Professor Douglas Lichtman, testified:

> [Professor Rubinfeld] assum[es], I think, a perfect substitution . . . assumptions about substitution, competition how all of these markets interrelate . . . . [I]t's intuitive. I understand why he was drawn to it. It's so nice to say, yes, roughly these will all be the same, revenue to royalty, revenue to royalty.[48]

When experts in applied economics disagree on the validity of an assumption, the Judges can find themselves in a quandary. Fortunately, as to Professor Rubinfeld's model, this dilemma was moot because the parties had proffered survey and industry evidence regarding the question of whether interactive subscriptions were sufficiently substitutable for noninteractive listening. As explained below, the answer was a split-decision.

First, the Judges noted that the record evidence was overwhelming that there is a sharp dichotomy between listeners who have a positive willingness to pay ("WTP") and therefore may pay a subscription fee each month for a streaming service and those listeners who have a WTP of zero. The most persuasive evidence on this point was found in the results of the conjoint survey conducted by *SoundExchange's own witness*,

45. *Id.* at 26344–45.

46. See *id.* at 26337–39 for detail regarding Professor Rubinfeld's calculations.

47. The interactivity adjustment is distinct from an "effective competition" adjustment; the latter is the adjustment of interest in this article.

48. Web IV Final Determination, *supra* note 3, at 26345 (quoting Transcript of Record, Day 15 (May 15, 2015) at 4043–44.).

Professor Daniel McFadden, who won a Nobel Prize for his significant contributions in the field of "discrete choice," which involves economic modeling through "conjoint" analyses and surveys. In this proceeding, he constructed and presented a conjoint survey regarding the value of attributes that a music subscription service might embody (such as sound quality, ad-free listening and a comprehensive repertoire) and he estimated the price attached to each attribute.[49] Although *his purpose* was to build a value for a subscription service from the sum of the prices consumers were willing to pay for such attributes, *the consequential takeaway* from his testimony was the following:

> I find that consumers of streaming services divide between those who are willing to pay for these services (and the extra features they offer) and those who are averse to paying for music streaming services . . . .[50]

Simply put, Professor McFadden's data revealed two classes of listeners: those who would pay a positive sum for various features available in a noninteractive service and those who refused to pay *any money for any features*. As one Service economist Dr. Steven Peterson explained, SoundExchange and Professor Rubinfeld emphasized the *average* WTP among the survey participants in service of their interactivity adjustment, but that average obscured the clear bimodality of Professor McFadden's results.[51]

Moreover, the record is replete with industry witness testimony corroborating this point. A Sony executive testifying on behalf of SoundExchange stated: "It's challenging to convince . . . consumer[s] to open their wallet and pay for something that is similar to something that is available to them for free . . . ."[52] A Universal executive likewise acknowledged that he lacked data to support a conclusion that there is "some meaningful group of users who would be willing to pay to subscribe to Pandora beyond those who already have" and that "the music-buying public has never been a huge market."[53] Further supporting this dichotomy, an internal Warner strategy document noted that "[a]d-supported services have proven to primarily be additive and to be targeting a different demographic than paid services," and testimony from a Warner Music executive noting that Pandora weaned listeners from terrestrial radio whose listening, therefore, had not previously been responsible for revenues that could be monetized into upstream royalties.[54] Finally, survey evidence credited by the Judges

49. *Id.* at 26338.

50. *Id.* at 26345 (quoting Testimony of Daniel L. McFadden ¶ 10).

51. *Id.* ("[Professor McFadden's] distribution . . . has two peaks . . . . [T]he average willingness to pay for a service with no ads masks the . . . bimodal distribution . . . at the peaks [of] divergent preferences . . . regarding a service with or without advertisements.") (quoting Dr. Peterson).

52. *Id.* at 26345 (quoting Transcript of Record, Day 3 (Apr. 28, 2015) at 376).

53. *Id.* (quoting Transcript of Record, Day 4 (Apr. 30, 2015) at 990, 1114).

54. *Id.* at 26346 (quoting Ex. 3118 at 11 and citing Transcript of Record, Day 9 (May 7, 2015) at 2405–06).

demonstrated that "the majority of people are essentially . . . seeking free services" and 79% of survey respondents were not likely to pay for a subscription service."[55]

Tying these facts to the nature of consumers' divergent tastes, another SoundExchange expert economic witness, David Blackburn, testified as to the distinction between "music aficionados" with their higher WTP for music and casual listeners with zero WTP:

> [T]he consumer who values sound recordings highly is apt to have an interest in particular sound recordings, and will be more willing to pay for a subscription that allows him or her more "functionality," including the ability to select songs on demand. By contrast, the more casual listener, with a number of free alternatives such as terrestrial radio, lacks the same desire to select a particular song at a particular time.[56]

For these reasons, the Judges found as follows:

> Despite the overwhelming evidence of this dichotomy in WTP, [Professor] Rubinfeld's model is based *solely on the subscription platform*. Thus, it is not reasonable to conclude that the ratio of subscription rates to royalties in the interactive market is relevant to the opportunity cost to a record company of listeners who opt instead for ad-supported noninteractive listening. Rather, ad-supported (free-to-the-listener) internet webcasting appeals to a different segment of the market, compared to subscription internet webcasting, and therefore the two products differentiated by this attribute ("ads and free" vs. "no ads and subscription fee") *cannot be compared to perform a 1:1 measure of opportunity costs as is the case in Dr. Rubinfeld's "ratio equivalency" model.*[57]

For these principle economic reasons,[58] the Judges declined to utilize Professor Rubinfeld's "ratio equivalency" model to set the noninteractive rate in the *ad-supported* market. However, the Judges did find the economic logic and marketplace facts attendant to his "ratio-equivalency" model to be useful and appropriate for setting the royalty rate in the noninteractive *subscription* market. Specifically, the Judges found

55. *Id.* (quoting Transcript of Record, Day 14 (May 14, 2015) at 3742).

56. *Id.* (citing Transcript of Record, Day 6 (May 4, 2015) at 1677–79) (testimony of Blackburn).

57. *Id.* at 26346 (emphasis added). An important economic point regarding the ratio equivalency model: When applied on behalf of an input supplier who incurs a *positive marginal cost* to produce the input, the relevant ratio across input buyers would be input price/input cost, so inputs would be sold to buyers with a higher willingness-to-pay. However, in the digital music sectors, the additional electronically streamed copies have essentially *a zero marginal cost*. (Such "second copies" are called a type of "public goods" by economists, in contrast to goods with positive marginal costs, which are typically "private goods.") To be sure, costs such as identifying potential artists and songs, developing artists, producing the songs, and marketing both to the public are substantial, and of course profits must be anticipated and realized—all of which are considered "first copy" costs, not marginal "second copy" costs in this context. In economics, price in a perfectly competitive market is equal to marginal cost, so, with a marginal cost of zero, the market would obviously fail to exist, and prices thus must be established in another manner. But this paragraph has gone on long enough—the purpose here is not to lay out all the microeconomics attendant to rate-setting. However, if you are curious, see Phonorecords III, *supra* note 10, at 1976–80 (Strickler, J., dissenting).

58. *See* Web IV Final Determination, *supra* note 3, in full for all other facts and analyses supporting the Judges' findings regarding the use and limitations on SoundExchange's ratio-equivalency model.

support for this application of the "ratio equivalency" model in the subscription market to be supported by the following points:

(1) Revenues in both markets are derived from subscription revenues and are thus reflective of buyers with a positive WTP for streamed music;
(2) functional convergence and downstream competition for potential listener indicate a sufficiently high cross-elasticity of demand as between interactive and noninteractive services, provided the noninteractive subscription rate is reduced to reflect the absence of the added value of interactivity; and
(3) a steering adjustment is made to eliminate the complementary oligopoly effect and thereby provide for an effectively competitive market price.[59]

2. Pandora's Noninteractive Benchmark

Pandora proposed the following rates:[60]

Table 2: Pandora's Rate Proposal

Year	Ad-Supported	Subscription
2016	$0.00110–$0.00120	$0.00215–$0.00224
2017	$0.00112–$0.00123	$0.00218–$0.00228
2018	$0.00114–$0.00125	$0.00222–$0.00232
2019	$0.00116–$0.00127	$0.00226–$0.00236
2020	$0.00118–$0.00129	$0.00230–$0.00240

Pandora relied upon its 2014 agreement with Merlin (the "Pandora/Merlin Agreement") to support its rate proposal. Merlin is a global rights agency that represents and collectively negotiates on behalf of thousands of independent record companies in the United States.[61] Merlin members who entered into this agreement could have declined to enter into the Pandora/Merlin Agreement and thus remained bound in 2014 and 2015 by the applicable statutory royalty rates.[62]

The key provisions of the Pandora/Merlin Agreement were the following:

59. *Id.* at 26353. The discussion of a "steering adjustment" is set forth *infra* in connection with the Pandora and iHeart rate proposals.
60. Web IV Final Determination, *supra* note 3, at 26355.
61. *Id.* at 26355–56.
62. *See supra* note 37.

> The 2014 per-play contract rates are *lower* than the then-existing statutory rates for ad-supported and subscription services.[63]

The agreement contains what is known as a "steering" provision. Steering, as used in this proceeding, refers to a licensee's technical ability and contractual right to "control the mix of music that's played on the service" based on "differences in royalty rates charged by different record companies."[64]

The Pandora/Merlin Agreement applied Pandora's latest technology, allowing it to steer its listeners *toward* sound recordings from labels with a relatively *lower* royalty rate and *away from* labels with a relatively *higher* royalty rate.[65] Just as the "ratio equality" model was "*foundational*" to SoundExchange's rate proposal, steering is the "*central piece*" of Pandora's rate proposal.[66]

In light of the restriction on public disclosure of the actual steering terms in the Pandora/Merlin agreement, it is instructive to provide the following hypothetical that plugs in arbitrary values of the varying royalties and varying plays:

> Under the hypothetical agreement:
>
> Pandora promises to increase the quantity of plays by at least 15% . . . above Merlin's natural [*i.e.*, historic] performance rate
>
> and, in exchange,
>
> Pandora will receive a discount on the royalty rate of 10%.
>
> Assume that before this agreement Pandora paid Merlin at the existing statutory rate of $0.0020 in royalties.
>
> The *revenue effect without steering* over, *e.g.,* 1,000 natural (historical) plays is:
>
> $0.0020 x 1000 = $2.00 Total Revenue *without steering*.
>
> Under the new steering agreement, *the number of plays increases* by 15%, from 1,000 to 1,150.
>
> Under the new steering agreement, *the royalty rate decreases* by 10% from $0.0020 to $0.0018. After agreement royalty is $0.0018 and plays increase from 1,000 to 1,150.
>
> The *revenue effect with steering* over these 1,150 plays (historical + steered) is:
>
> $0.0018 x 1150 = $2.07 Total Revenue *with steering*.

63. The specific rates were deemed proprietary and confidential and therefore "restricted," and cannot be disclosed in any public document, including this Article. A hypothetical example is presented *infra*.

64. Web IV Final Determination, *supra* note 3, at 26356.

65. *Id.*

66. *Id.* (quoting Testimony of Carl Shapiro at 27).

Cui bono? *Clearly*, Merlin comes out ahead with higher total revenue.[67] Does Pandora also gain? Of course—otherwise it would not have entered into the agreement. But how? Recall that Pandora is now paying $0.0018 instead of $0.0020 for 150 plays above Merlin's historical play share. But these extra 150 plays needed to come from somewhere, and that "somewhere" was from the plays that otherwise would have been made of sound recordings from other companies—including Sony, Universal, and Warner. Thus, Pandora reduced its royalty cost by $0.0002 (i.e., $0.0020 - $0.0018) across 150 plays, which equals a cost savings of $0.03 (i.e., $0.0002 x 150). When one considers the millions of sound recordings that can be substituted via steering, these small values add up to real money!

Of course, as non-economists well know, economists are fond of noting that "there is no such thing as a free lunch." So, *cui malo*? The negatively affected parties are the record companies whose historical play rates were reduced to allow Merlin to receive 15% more plays.

The impact of steering 15% toward one label and away from the others was negligible from the perspective of the listener, according to Professor Shapiro. Relying on Pandora's Steering Experiments (discussed *infra*) he testified that a 15% steering "boost" to a Major with a prior "natural" performance rate of 20% would have "almost no perceptible impact on the listening experience, as it would entail a change in 'one [song] out of 30' or 'one song every couple [of] hours.'"[68]

E. PANDORA'S STEERING EXPERIMENTS

As noted *supra*, to support its further assertion that the effects of potential steering can be pervasive throughout the noninteractive market, Pandora also relied on evidence of its 2014 in-house "steering experiments." These steering experiments tested Pandora's ability to overspin or underspin recordings owned by each of the Majors.[69]

Over thirteen weeks, Pandora conducted a series of steering experiments in order to determine whether changes in the number of sound recording plays owned by a particular record company would have a measurable impact on the average hours per listener.[70] The Steering Experiments targeted UMG, Sony, or WMG with a steering of play shares (in the treatment group) as compared to plays that would occur according to the standard Pandora music recommendation results (in the control group).

67. The fact that Merlin labels would earn more revenue under the lower steering-based rate undermined SoundExchange's argument that the statutory rate acted like a "shadow," compelling labels to pay more than they would have in an unregulated market. Web IV Final Determination, *supra* note 3, at 26329–31 .

68. Web IV Final Determination, *supra* note 3, at 26368–69 n.143 (quoting Transcript of Record, Day 17 (May 19, 2015) at 4630–35).

69. *Id.* at 26357–58.

70. *Id.* at 26357.

The play share steering percentages were: -30%, -15%, +15%, and +30% for each of the three companies.[71] The subjects of the Steering Experiments were all Pandora listeners, each randomly assigned to one of the twelve treatment groups or to the single control group.[72]

The experiments demonstrated that Pandora's steering -15% or +15% for all three Majors *did not* cause a statistically significant change in listening behavior. However, Pandora's steering -30% or +30% *did cause* a statistically significant change in listening behavior.[73]

The Judges found that Pandora's steering-based noninteractive benchmark was informative regarding the statutory rates to be set.[74] In reaching these findings, the Judges considered, and rejected, several economic arguments raised by SoundExchange, as discussed below.

First, the Judges rejected SoundExchange's argument that steering creates merely a "first mover" advantage for licensors who enter into steering arrangements before their competitors. The Judges described this argument as seductively simple: It is based on the tautology that no noninteractive service can steer more than 100% of its sound recordings.[75]

To take a simple example,[76] assume there are three Majors, U, S, and W, and one Indie, M. Assume the ex ante steering allocation of plays was 40% for U, 30% for S, 20% for W, and 10% for M, and all plays were priced at $0.0020. The noninteractive service then strikes a deal with M to increase its plays by 50% over the ex ante percentage, in exchange for, say, a 10% reduction in per-play rates to only M. Then, M's noninteractive market share increases by 50% from 10% to 15% (while its per-play rate declines by only 10%) resulting in more revenue for M *ex post* steering). As a "first mover," M indeed benefits.

However, as SoundExchange notes, the noninteractive licensee cannot promise all three other licensors, U, S, and W, the same 50% increase in plays via steering in the same contract period. If it did, U would realize a market share increase from 40% to 60%; S would realize a market share increase from 30% to 45%; and W would realize a market share increase from 20% to 30%. All four licensors, including M, would thus be promised 60% + 45% + 30% + 15% = 150%.[77]

> As the CRB Judges explained:
>
> SoundExchange's point is that, by definition, it is mathematically impossible for a noninteractive licensor to allocate more than 100% of its plays. Thus, SoundExchange

71. *Id.* at 26358.
72. *Id.*
73. *Id.*
74. *Id.* at 26366–67.
75. *Id.* at 26366.
76. *Id.*
77. *Id.*

> concluded, steering can only work in a non-statutory setting and, even then, never for all licensors.[78]

This tautological argument, the Judges noted, of course is mathematically correct, but only in the *static* sense. However, the Judges asked, is it correct *economically*, in the *dynamic* sense? Professor Shapiro, for Pandora, responded to this argument from the witness chair in the following colloquy:

> [JUDGE STRICKLER]
>
> Let's . . . take . . . the market we're dealing with here [and] address the first-mover criticism . . . that well, sure, you can steer to . . . record company A . . . but you can't steer to all of them because you can't play more than 100 percent of the music. *Is it . . . the threat of steering that pushes everybody . . . towards their original percentages to avoid being that odd man out who was the holdout for the higher price?*
>
> [PROFESSOR SHAPIRO]
>
> *That's exactly—yes, absolutely. The competitive outcome is when each of the record companies is at a rate where they're . . . not disadvantaged relative to the other guys . . . . This notion that you can't steer, the 100% thing, it's kind of offensive to an antitrust economist . . . because it's basically saying . . . price competition is some horrible thing.*[79]

Thus, as Professor Shapiro set forth in his written testimony, with steering, the "net result . . . in a workably competitive market may well be relatively little actual steering," whereas, in the absence of steering, "[y]ou would be basically going to the rate that a cartel or monopolist would set."[80]

Confirming the effectiveness of a threat of price competition generated by Pandora's expressed willingness to steer, SoundExchange's own industry witness—an executive with a Merlin-represented label—testified that it was in his record label's self-interest to act "defensive[ly]" to enter the Pandora/Merlin Agreement, in light of the fact that Pandora might enter into "similarly structured deals" with other record companies.[81] And bringing the analysis back to the "hypothetical" market (of which this actual market evidence was confirmatory), a SoundExchange expert witness acknowledged that it would be a fundamental mistake to assume that record companies would ignore the "opportunity cost" caused by a noninteractive service steering away from their repertoires.[82]

Accordingly, the Judges found that steering in the noninteractive hypothetical market (experimental) and actual market (the Pandora/Merlin and iHeart/Warner

78. *Id.*

79. *Id.* (quoting Transcript of Record, Day 17 (May 19, 2015) at 4561–63) (emphasis added).

80. *Id.* (quoting Testimony of Carl Shapiro at 9 and Transcript of Record, Day 17 (May 19, 2015) at 4575).

81. *Id.* at 26367 (quoting Transcript of Record, Day 2 (Apr. 28, 2015) at 611 and Day 25 (June 1, 2015) at 6963).

82. *Id.* (quoting Transcript of Record, Day 6 (May 4, 2015) at 1516–17).

agreements[83]) would mitigate the complementary oligopoly effect, making the market effectively competitive. That is, "[s]teering is synonymous with price competition in this market, and the nature of price competition is to cause prices to be lower than in the absence of competition, through the ever-present 'threat' that competing sellers will undercut each other in order to sell more goods or services."[84]

The Judges also rejected SoundExchange's argument that this steering-based process would result in a "*race to the bottom.*"[85] Rather, it typifies a "race" to a workably or effectively competitive price. On the *licensees'* side of the market (the buyers' side), the limit on the demand for lower rates through steering is reached when the noninteractive service is no longer in a position to make further substitutions of one record company's sound recordings for another's because the potential for lost revenues exceeds the cost savings. Indeed, this is the lesson from Pandora's Steering Experiments.[86] As for the *licensors*, the limit on their willingness to license (supply) recordings at royalty rates reduced by the threat of steering would be reached when each determines that any further reduction in the rate will not be sufficient to cover all marginal costs, to contribute sufficiently to recurring fixed costs (including opportunity costs) and to provide for the generation of profits.[87]

As an important qualifier to the above point, the Judges emphasized that "price competition through steering does not diminish the stand-alone monopoly value *of any one sound recording*." [88] Further, effective competition through steering does not diminish the "*firm-specific monopoly value of each Major's repertoire taken as a whole*" (and the Judges rejected an argument to further reduce the statutory royalty rate on these bases).[89] More particularly, the Judges found no record evidence to suggest that the market power that a Major enjoys individually by ownership of its collective repertoire is the consequence of improper activity or that it is being used *individually* by a Major to diminish competition. That is, the Judges saw no evidence to demonstrate that the Majors' size and *individual* market power is not the result of the efficiencies and economies of scale and/or their superior operations.[90]

However, the Judges cautioned that this defense of *ordinary* oligopolies (absent evidence of *improper* attempts to restrain trade or restrict competition) must not be confused with the Judges' holding regarding the anticompetitive effects of the *complementary* oligopoly that exists among the Majors (plus Merlin).[91] Because the Majors could utilize their complementary oligopoly power to prevent price competition among them—as proven by, *inter alia*, the evidence of the pro-competitive

83. The iHeart/Warner agreement is discussed *infra*.

84. Web IV Final Determination, *supra* note 3, at 26366.

85. *Id.* at 26367.

86. *Id.* at 26366.

87. *Id.*

88. *Id.* at 26368.

89. *Id.* (emphasis added).

90. *Id.* (citing Harold Demsetz, *Industry Structure, Market Rivalry, and Public Policy*, 16 J. L. ECON. 1, 3 (1973) (noting that "scale economies," "[n]ew efficiencies" and "superior ability" can form a "competitive basis acquiring a measure of monopoly power").

91. Web IV Final Determination, *supra* note 3, at 26368.

effects of steering—the Judges found they must establish rates that reflect steering, in order to reflect an "effectively competitive" market.[92] On this distinction, the Judges noted the abundant economic support for their position, identifying "economists quite unwilling to *assume* that a given monopoly or oligopoly structure is inefficient and anticompetitive [who nonetheless] bristle at the idea that supranormal pricing arising from a complementary oligopoly is reflective of a well-functioning competitive market."[93]

SoundExchange also objected to any application to the Majors of the steering effects in the Pandora/Merlin Agreement's or the Pandora steering experiments, because a Major would not agree to such steering. The Judges found these arguments persuasive (but not dispositive), as explained below.

The experiments reflected only a *quantity* adjustment that could be attempted with regard to the Majors, not a *rate* adjustment arising from steering to or from a Major. By contrast, the Pandora/Merlin Agreement does reflect the impact of steering on negotiated *rates* (as does the iHeart/Warner Agreement). Thus, while the Judges found the steering experiments to be probative of the *general principle* that steering can be effected to some extent without a negative impact on listenership, the Judges did not accept that this constitutes direct evidence probative of the *specific* rates that would result from steering or the threat of steering *against a Major*.[94] Moreover, even Pandora's own Chief Financial Officer testified that Pandora would have to offer a higher steering-based rate to a Major than Pandora obtained in the Pandora/Merlin Agreement.[95] In this regard, the Judges also noted that the Majors' repertoires must be distinguished from those of the Indies.[96]

In sum, the Judges agreed with SoundExchange that Pandora's evidence did not support a specific steering-based rate to which a Major would agree, given its (non-complementary) oligopoly power arising from its larger and more popular repertoire and overall scale. However, the Judges *rejected* SoundExchange's broader claim that a Major could avoid steering altogether in the hypothetical effectively competitive market. As discussed below, the Judges rejected SoundExchange's arguments that the Majors would respond to a steering threat by: (1) withholding their entire repertoires;

92. *Id.*

93. *Id.* (citing Francesco Parisi & Ben Depoorter, *The Market for Intellectual Property: The Case of Complementary Oligopoly*, *in* THE ECONOMICS OF COPYRIGHT: DEVELOPMENTS IN RESEARCH AND ANALYSIS (Wendy J. Gordon & Richard Watt eds. 2003); Mark A. Lemley & Philip J. Weiser, *Should Property or Liability Rules Govern Information?* 85 TEX. L. REV. 784, 786–87, 824 (2007); and Determination of Royalty Rates for Digital Performance Right in Sound Recordings and Ephemeral Recordings (Web III Remand), 79 FR 23102, 23114 (citing testimony of SoundExchange's expert economic witness in *Web III*, Professor Janusz Ordover).

94. Web IV Final Determination, *supra* note 3, at 26372–73.

95. *Id.* at 26373 (citing Transcript of Record, Day 16 (May 18, 2015) at 4318.).

96. *Id.* (citing Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services (SDARS II), 78 Fed. Reg. 23054, 26063 (Apr. 17, 2013) (the Majors are distinguishable from the Indies "by virtue of the depth and breadth of their music catalogues [which] make up a critical portion of the sound recording market.").

(2) imposing Anti-Steering or "Most Favored Nation" contract clauses; and/or (3) requiring up-front lump sum royalty payments from the noninteractive services.

1. Withholding the Entire Repertoire

SoundExchange argued that, in an unregulated market, a Major could respond to a threat of steering by counter-threatening to withhold its entire repertoire from that noninteractive service, given that access to its entire repertoire is essential (a "must have") for the viability of a noninteractive service.[97] But this threat to "go dark" on a service, the Judges noted, would be a *function of their complementary oligopoly market power*.[98]

2. Anti-Steering or MFN Clauses

In the interactive market, the Majors commonly include anti-steering or "Most-Favored-Nation" ("MFN") clauses in their agreements with the services.[99] The Judges found that such clauses have no purchase vis-à-vis steering in exchange for lower rates in the *noninteractive* market. There, insistence by a Major that a noninteractive service abide by an anti-steering or MFN clause would be "tantamount to importing the anticompetitive complementary oligopoly power of the Majors from the interactive market into the noninteractive market."[100]

3. Require Up-Front Royalty Payments

Finally, SoundExchange asserted that a record company could frustrate a steering attempt by requiring noninteractive services to pay their royalties up-front as a lump sum, instead of on a per-performance basis.[101] Such a lump-sum requirement would frustrate steering because if a licensee has already paid Record Company A its required, up-front fee (equal to its natural/historical play level multiplied by the old, higher per-play rate) *then the marginal cost going forward to the noninteractive service of playing a sound recording from Record Company A would be zero.* By contrast, Record Company B—even

97. *Id.* At first blush, it might seem inconsistent to find that a noninteractive service could steer away from a Major, but its repertoire is still a "must have" (i.e., an essential input). But the Judges noted that even Pandora's economic witness, Professor Dr. Shapiro, "candidly declined to reject the idea that the Majors' repertoires were 'must have'" even though noninteractive services could steer away from them to an extent." *Id.* at 26373 n.155. The Judges found that he so testified because "the popularity of the Majors' [plays] is the reason why steering away from their repertoires cannot be pursued beyond a certain level." *Id.* (From a formal economic perspective, a noninteractive service needed the "access" value of a Major's repertoire, even if it could use price competition (steering) to lower the "use" or "option" value of each sound recording.)

98. *Id.* at 26373.

99. *Id.*

100. *Id.* at 26373–74 (relying on the testimony of SoundExchange's own witness, Professor Rubinfeld, that the labels would use their "*substantial bargaining power*" and "say we're going to consider not using your service." Transcript of Record, Day 23 (May 28, 2015) at 6302–05).

101. *Id.*

if it offered a reduced steering rate—would still be insisting on *a rate greater than the marginal rate of zero the licensee would be paying to Record Company A*. The noninteractive service would thus be compelled to either pay the up-front lump sum and lose the benefits of price competition, or refuse to pay the lump sum and lose access to 100% of the repertoire of Record Company A, threatening the demise of the noninteractive service.

The Judges held that "this up-front lump sum strategy in actuality is merely [yet] another way in which a Major could bootstrap its otherwise unobjectionable market power to preserve *complementary oligopoly power* in the noninteractive market."[102]

In sum, the Judges found that all three threats would constitute classic examples of the very anticompetitive conduct they were intending to avoid in setting an "effectively competitive" rate.[103] Each of the three contract devices relied upon by SoundExchange to defeat steering are dependent upon the exercise of market power to preserve the power of complementary oligopoly, which would thwart effective competition in the noninteractive market. Thus, all three contracting devices would be inconsistent with the dynamics of an effectively competitive market.

For the foregoing reasons, the Judges utilized Pandora's steering-based benchmark as evidence of an effectively competitive noninteractive royalty rates that would be paid *by Indies* in the ad supported market.[104] Although Pandora had proposed two benchmarks, depending upon the level of steering, the Judges found appropriate for rate-setting purposes the lower of the two steering alternatives presented by Pandora, i.e., the 15% steering figure, rather than the higher 30% that figure, because only the 15% steering level did not show a statistically significant is change in listening behavior according to the Pandora Steering Experiments.[105]

F. BACK TO PROFESSOR RUBINFELD'S RATIO-EQUIVALENCY MODEL TO APPLY THE "EFFECTIVE COMPETITION" ADJUSTMENT FOR THE SUBSCRIPTION RATE

The foregoing proof of concept regarding steering also needed to be integrated into the Judges' analysis of Professor Rubinfeld's ratio-equivalency model as applied to the noninteractive *subscription* model. His model did not address the economic issue revealed by the steering evidence, i.e., when a noninteractive service—*subscription* as well as ad-supported—can play more steered songs for a lower royalty and fewer songs which require a higher royalty.

Accordingly, the Judges adjusted Professor Rubinfeld's "ratio equivalency" model by importing the steering adjustment reflected by the evidence, a 12% downward

102. *Id.* at 26374.

103. *Id.* at 26373 (citing Blue Cross & Blue Shield United of Wisconsin v. Marshfield Clinic, 65 F.3d 1406, 1415 (7th Cir. 1995) (Posner, J.) ("It would be a strange interpretation of antitrust law that forbade competitors to agree on what price to charge, thus eliminating price competition among them, but allowed them to divide markets, thus eliminating all competition among them.")).

104. *Id.* at 26374.

105. *Id.* at 26374–75.

adjustment,[106] to set a statutory rate for the subscription market that did not import the supranormal pricing features from the interactive market.[107]

More particularly, Professor Rubinfeld's model applied the complementary oligopoly pricing evidence from the interactive evidence market as the record companies' opportunity cost for royalties lost to noninteractive services.[108] Thus, his "ratio equivalency" would simply sustain whatever complementary oligopoly price distortions were present in the interactive marketplace. In the present case, as explained *supra*, the ability of noninteractive services to steer away from higher priced recordings and toward lower priced recordings (or threaten to do so) serves as a buffer against the supranormal pricing that arises from the impact of complementary oligopoly power.[109]

F. iHEART RATE PROPOSAL

Occasionally, the Judges are confronted with an economic model that is not merely problematic because it is predicated on unstated assumptions; rather, its deficiencies are open and notorious. Such was the case with an important part (but not all) of iHeart's proposal for a steering-based royalty rate.

iHeart proposed a per-play rate of $0.0005 (without differentiating ad-supported and subscription services).[110] This was more than 50% below even Pandora's lowest proposed rate.

What was the model that iHeart proffered for such a substantially lower royalty rate? Like, Pandora, iHeart had entered into a steering agreement, but iHeart's agreement was with Warner—a Major.[111] The specific rate provisions were deemed confidential and proprietary and thus restricted from public view. However, a Pandora expert economic witness described the steering structure in the agreement as follows:

> As an economic matter, the [iHeart]-Warner agreement reflects a bundle of two distinct sets of rights. The first set provides a license for iHeartMedia to play the same number of Warner performances as it would have played absent the agreement. The

106. *Id.* at 26405.

107. *Id.* at 26347.

108. *Id.* at 26347–48.

109. Aside from this steering-based effective competition adjustment, the Judges found no further basis to adjust the royalty rate sought by SoundExchange as derived from Professor Rubinfeld's ratio equivalency model for the *subscription* market (from $0.0025 to $0.00225 per play in 2015). In this regard, the Judges noted that Pandora's expert, Dr. Shapiro (the only Service expert to propose a separate subscription rate), had proposed a rate of $0.0022, quite similar to Professor Rubinfeld's proposed rate, after the Judges applied the "effectively competition" steering adjustment to his proposed subscription rate. *See* at 26405. No other adjustments were required because "[i]f there was truly a material issue as to how WTP, convergence and functionality gradations impacted royalty rates in the noninteractive subscription market, the Judges would have expected to see a much wider gulf between the SoundExchange and Pandora subscription-based proposals." *Id.* at 26348 n.105

110. *Id.* at 26375.

111. *Id.*

> second set of rights provides a license for iHeartMedia to play additional Warner performances, above and beyond those it would have played absent the agreement.[112]

Thus, the structure of the steering agreement in the iHeart/Warner agreement differed from the structure of the Pandora/Merlin agreement. In the latter, a single lower rate would bind in exchange for the binding steering increase in plays. In the iHeart/Warner agreement, the statutory rate applied to plays at the historic level, but a significantly lower rate would bind for additional plays.

As the Judges explained, quoting extensively from the testimony of iHeart's economic expert, he proffered an opinion that the two-tier nature of this structure had economic significance:

> [iHeart's expert] opines that compensation for the first "bundle" of rights is directly affected by the existing statutory rate, and therefore "provides essentially no information about the rate willing buyers and sellers would negotiate in the absence of government regulation."
>
> However, [he] opines that the second "bundle" . . . is "highly relevant to what willing buyers and willing sellers would negotiate if unconstrained by government regulation." . . . [The expert testified that]:
>
> "[t]his [second] part of the bundle involves a license for iHeart to play additional Warner performances, above and beyond those it would have played absent the agreement. Those additional performances are not directly influenced by the existing statutory rate, because absent the agreement, iHeart wouldn't play them and Warner wouldn't receive any compensation for them. The royalty rate negotiated for this second part of the bundle, therefore, is a more appropriate measure of what a willing buyer and a willing seller would negotiate if unconstrained by government regulation. Warner licensed the rights to those performances to iHeart, and iHeart compensated Warner for that license, at rates that were acceptably profitable for both parties. The rate here was not determined by regulation; it was determined by the give-and-take of a true negotiation."[113]

For several reasons, the Judges rejected the iHeart proposal. Of particular importance, the Judges found the basic premise of the approach to be erroneous. That is, in a misguided effort to avoid the so-called "shadow" of the statutory rate, iHeart's expert witnesses had essentially substituted *a rate of zero* for the sound recordings played under the existing statutory rate, which were the overwhelming majority of plays.[114] Then, these witnesses conceptually divided the expected total of performances under the iHeart/Warner Agreement into two *value*-bundles, as if the *economic* value of the agreement should track the *contractual* dichotomy in rates.[115] With this sleight-

112. *Id.* at 26376 (quoting Testimony of Daniel R. Fischel and Douglas G. Lichtman ¶ 45).

113. *Id.* (quoting Testimony of Daniel R. Fischel and Douglas G. Lichtman ¶¶ 48–49) (internal citations omitted).

114. *Id.* at 26382.

115. *Id.*

of-hand in place, the iHeart experts conceptualized the second value-bundle as a function of the number of additional performances iHeart expected to be played under the lower direct deal rate and the increase in revenues generated, and divided the *incremental* revenue by the number of *incremental* plays to determine their proposed statutory rate.[116]

The Judges called out the blatant error in iHeart's economic argument:

> This methodology intentionally attributes no market value to the rate and revenue paid for the *pre-incremental* performances. Although, as noted above, [iHeart's experts] engage in this process in order to remove the alleged impact of the "shadow" of the statutory rate, they merely replace one supposed problem with a very real and more serious problem. That is, they replace the statutory rate with an effective rate of zero for the pre-incremental performances. There was no evidence presented in this proceeding, indeed no logical evidence could be presented, to support an assertion that the bulk of the pre-incremental performances under iHeart's "two bundle" concept would be priced at zero in an actual market. To state the obvious, the creation of sound recordings is not costless, and prices are positive because costs must be recovered.
>
> Relatedly, although iHeart would like the Judges to focus only on the incremental number of performances and the incremental revenue, those incremental values cannot exist without iHeart first paying for the pre-incremental performances at pre-incremental rates. To put the point colloquially, "you cannot get there from here." That tautological point is not avoided by arbitrarily attributing a zero value to the pre-incremental performances.[117]

The Judges also made short work of iHeart's claim that its approach somehow avoided the "shadow" of the statutory rate:

> [T]to use a zero rate in order to remove the alleged shadow of the Judges' statutory rate or a settlement rate would be, to put the matter colloquially, "throwing out the baby with the bathwater." A functionally zero rate for the pre-incremental performances is an ink blot that obliterates any economic value inherent in the majority of the performances for which the rates must be established.[118]

Accordingly, the Judges rejected iHeart's incremental approach and thus rejected its proposed statutory royalty rate of $0.0005 per play, emphatically stating: "To be clear,

116. *Id.*

117. *Id.* The Judges also analogized to a not uncommon marketing approach to illuminate the defect in iHeart's argument: Tire sellers will often advertise a special offer—a buyer can pay for three tires and get the fourth tire free. This is economically (and mathematically) equivalent to a 25% reduction in the price of four tires. No one could go to the automotive store and receive only the "free" fourth tire! (SoundExchange made a similar point, suggesting that a "buy one ice cream cone for $1, get two for $1.06" promotion did not demonstrate that the market price of an ice cream cone was only six cents.) *Id.* at 26382. A reader with a background in economics will note that iHeart's experts conflated market price with price discriminatory bundling discounts, and misapplied declining *marginal* per-unit revenue (on a downward-sloping demand curve, a/k/a the average revenue curve) to miscalculate a price that should have been measured properly based on *average* revenue per-unit. *Id.* at 26382 n.180. The relevance of *average revenue* in connection with the iHeart proposal is discussed *infra*.

118. *Id.* at 26382.

that incremental $0.0005 proposed rate does not constitute a benchmark or a guidepost which the Judges have relied for any purpose, and that incremental rate and the analysis from which it was derived has not influenced the Judges in their determination of the statutory rate in this proceeding."[119]

Fortunately, the evidentiary record provided sufficient evidence to calculate the "average" per play rate pursuant to the iHeart/Warner Agreement. That is, by applying a weighted (by number of plays) average of the historical share rate and the incremental rate, the Judges were able to calculate the effective rate paid by iHeart to Warner under this steering arrangement.[120] Thus, the Judges found that this average rate satisfied the tests for a useful benchmark that is probative of the rate that would be paid *by a Major*, as a willing seller/licensor, to a noninteractive service, as a willing buyer/licensee.[121]

More particularly, when combined appropriately with the Pandora/Merlin Agreement—which related to the value of a steering-related effectively competitive rate for *Indies*—the two agreements provided record evidence to generate a per-play royalty rate for plays across an ad-supported service.[122] The evidence at the hearing indicated that the Majors' sound recordings comprise 65% of noninteractive streams, and the Indies' sound recordings comprise 35% of such streams.[123] Combining the steering-effected rates from both agreements and applying them according to the foregoing factors, the Judges established a royalty rate of $0.0017 per-play for plays on an ad-supported noninteractive commercial service.[124]

II. CONCLUSION

A distinguished economist wrote:

> Although music listeners may not realize it, economics lies at the heart of music that is created and produced. To truly understand and appreciate music, you need to understand economics. [U]nderstanding the economics of the music industry can yield insights into how economic forces affect our daily lives, work, and society in a

119. *Id.*

120. SoundExchange agreed that *if* the Judges were to identify evidence for a statutory rate in the iHeart/Warner Agreement, it could be based on the average rate, but not the incremental rate. *See id.* at 26384 (citing SoundExchange's post-trial acknowledgement that "[t]he *average effective rate* approach … is the proper analytical method").

121. *Id.* SoundExchange (and iHeart) raised other contested issues regarding the calculation of an effective rate, principally regarding other claimed elements of value within the iHeart/Warner Agreement. However, the parties did not provide sufficient evidence of the *monetary* value of such alleged additional elements, and thus the Judges could not further adjust the effective royalty rate. *See id. passim.*

122. *Id.* at 26405 ("a fundamental difference between these two benchmarks is that the iHeart/Warner benchmark reflects an effective rate between a Major and a noninteractive service, whereas the Pandora/Merlin Agreement reflects an effective rate between Indies and a noninteractive service").

123. *Id.*

124. *Id.* The D.C. Circuit Court of Appeals affirmed the Web IV Final Determination in all respects, including specifically the economic issues discussed in this article. *See* SoundExchange, Inc. v. Copyright Royalty Bd., 904 F.3d 41 (D.C. Cir. 2018).

> myriad of ways. [T]he music industry is an ideal laboratory for witnessing economics.[125]

This Article provides one example of this relationship between economics and music. The intense battle between economists in rate setting trial proceedings such as Web IV repeat themselves on a periodic basis for statutory royalty rates set for other sound recording distribution methods and also for the royalties paid by interactive streaming services for the mechanical (phonorecords) license of the musical works (not the sound recordings) underlying the transmission of on-demand interactive plays. In these subsequent proceedings, the economists representing licensors and licensees have applied the models proffered in Web IV, and additional models from their professional toolkit. In doing so, they seek to persuade the Judges that their modeling—as applied to the new market facts demonstrated by the evidence in those proceedings—satisfies the standard of "effective competition" as developed in Web IV.

125. ALAN B. KRUEGER, ROCKONOMICS: WHAT THE MUSIC INDUSTRY CAN TEACH US ABOUT ECONOMICS (AND OUR FUTURE) 4–6 (2019).