**LIBRARY OF CONGRESS**

**Copyright Royalty Board**

**37 CFR Part 385**

**[Docket No. 16–CRB–0003–PR (2018–2022)]**

## Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III)

**AGENCY:** Copyright Royalty Board, Library of Congress.

**ACTION:** Final rule and order.

**SUMMARY:** The Copyright Royalty Judges announce their final determination of the rates and terms for making and distributing phonorecords for the period beginning January 1, 2018, and ending on December 31, 2022.

**DATES:**

*Effective Date:* February 5, 2019.

*Applicability Date:* The regulations apply to the license period beginning January 1, 2018, and ending December 31, 2022.

**ADDRESSES:** The final determination is posted in eCRB at *https://app.crb.gov/*. For access to the docket to read the final determination and submitted background documents, go to eCRB and search for docket number 16–CRB–0003–PR (2018–2022).

**FOR FURTHER INFORMATION CONTACT:** Anita Blaine, CRB Program Assistant, by telephone at (202) 707–7658 or by email at *crb@loc.gov*.

**SUPPLEMENTARY INFORMATION:**

### Final Determination

The Copyright Royalty Judges (Judges) commenced the captioned proceeding to set royalty rates and terms to license the copyrights of songwriters and publishers in musical works made and distributed as physical phonorecords, digital downloads, and on-demand digital streams. *See* 81 FR 255 (Jan. 5, 2016). The rates and terms determined herein shall be effective during the rate period January 1, 2018, through December 31, 2022. Under the Copyright Act, royalty rates for uses of musical works shall end ''on the effective date of successor rates and terms, or such other period as the parties may agree.'' 17 U.S.C. 115(c)(3)); The Judges included the designation (2018–2022) in the docket number for this proceeding for the purpose of designating the relevant five-year period with the knowledge that affected parties may agree to successor rates and terms for a different or additional period. In this proceeding, each party included in its Proposed Findings of Fact (PFF) and Proposed Conclusions of Law (PCL) a designation of the rate period as January 1, 2018, through December 31, 2022. The Judges, therefore, adopt that agreed rate period.

For the reasons detailed in this Determination,[1] the Judges establish the following section 115 royalty rate structure, and rates, for the period 2018 through 2022.

For licensing of musical works for all service offerings, the all-in rate for performances and mechanical reproductions shall be the greater of the percent of service revenue and Total Content Cost (TCC) rates in the following table.

2018–2022 ALL-IN ROYALTY RATES

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Percent of Revenue | 11.4 | 12.3 | 13.3 | 14.2 | 15.1 |
| Percent of TCC | 22.0 | 23.1 | 24.1 | 25.2 | 26.2 |

The Judges also adopt for the new rate period existing royalty floors in effect for certain streaming configurations.

In the Initial Determination issued on January 27, 2018, the Judges promulgated regulatory terms that made changes in style and substance of the regulatory terms governing administration of the section 115 licenses. In February 2018, the Judges received a motion from Copyright Owners (Owners' Motion) and a joint motion from four Services (Services' Motion) seeking clarification of regulatory terms promulgated with the Initial Determination.[2] The Judges treated both motions as general motions governed by 37 CFR 350.4 and issued their ruling on the motions by separate Order dated October 29, 2018. The Judges incorporate the reasoning and rulings in that Order and to the extent necessary for clarity, include portions of that Order in this Final Determination. The final text of the amended regulations is set out below this **SUPPLEMENTARY INFORMATION** section.

### I. Background

*A. Statute and Regulations*

The Copyright Act (Act) establishes a compulsory license for use of musical works in the making and distribution of phonorecords. 17 U.S.C. 115. For purposes of section 115, phonorecords include physical and digital sound recordings embodying the protected musical works, digital sound recordings that may be downloaded or streamed on demand by a listener, and downloaded telephone ringtones. Entities offering bundled music services and digital music lockers are also permitted to do so under the section 115 compulsory license.

The section 115 compulsory license created in 1909, reflected Congress's attempt to balance the exclusive rights of owners of copyrighted musical works with the public's interest in access to the protected works. However, Congress made that right subject to a compulsory license because of concern about monopolistic control of the piano roll market (and another burgeoning invention, phonorecords). 17 U.S.C. 1

[1] This rate determination is not unanimous. Judge Strickler prepared, to a disproportionately large degree, the initial drafts of this Determination. Notwithstanding the Judges' concurrence on most of the factual recitation and economic analysis, they were unable to reach consensus on their conclusions. Judge Strickler's dissenting opinion is appended to and is a part of this rate determination. Note that all redactions in this publication were made by the Copyright Royalty Judges and not by the **Federal Register**.

[2] National Music Publishers' Association and Nashville Songwriters Association International together filed the Copyright Owners' Motion for Clarification or Correction . . . (Owners' Motion). Amazon Digital Services, LLC; Google Inc.; Pandora Media, Inc. and Spotify USA Inc. filed a Joint Motion for Rehearing to Clarify the Regulations (Services' Motion). The Judges did not treat the motions as motions for rehearing under 17 U.S.C. 803(c)(2), as neither requested a literal rehearing of evidence or legal argument.

(1909); *see also* H.R. Rep. No. 60–2222, at 9 (1909). This license is often referred to as the ''phonorecords'' license, but is also identified, synonymously, as the ''mechanical'' license.

Congress revised the mechanical license in its 1976 general revision of the copyright laws. The 1976 revision also created a new entity, the Copyright Royalty Tribunal (CRT), to conduct periodic proceedings to adjust the royalty rate for the license.[3]

In 1995, Congress passed the Digital Performance Right in Sound Recordings Act (DPRA),[4] extending the mechanical license to ''digital phonorecord deliveries'' (DPDs), which Congress defined as each individual delivery of a phonorecord by digital transmission of a sound recording which results in a specifically identifiable reproduction by or for any transmission recipient of a phonorecord of that sound recording, regardless of whether the digital transmission is also a public performance of the sound recording or any nondramatic musical work embodied therein. 17 U.S.C. 115(d). Accordingly, the section 115 mechanical license now covers DPDs, in addition to physical copies.

By statute, the Judges commence a proceeding to determine royalty rates and terms for the section 115 license every fifth year. *See* 17 U.S.C. 803(b)(1)(A)(i)(V). The Act favors negotiated settlements among interested parties, but in absence of a settlement, the Judges must determine ''reasonable rates and terms of royalty payments. . . .'' The Judges must further set rates that comport with the itemized statutory policy considerations described in section 801(b)(1) of the Act. Rates and terms for the mechanical license are codified in chapter III, part 385, title 37, Code of Federal Regulations.

As currently configured, the applicable regulations are divided into three subparts.[5] Subpart A regulations govern licenses for reproductions of musical works (1) in physical form (vinyl albums, compact discs, and other physical recordings), (2) in digital form when the consumer purchases a permanent digital copy (download) of the phonorecord (PDD), and (3) inclusion of a musical work in a purchased telephone ringtone. Subpart B regulations include licenses for (1) interactive streaming and limited downloads. The regulations in subpart C relate to limited offerings, mixed bundles, music bundles, paid locker services, and purchased content locker services. The current regulations resulted from a negotiated settlement of the previous mechanical license proceeding.

*B. Prior Proceedings*

Until 1976, Congress legislated royalty rates for the mechanical reproduction of musical works and notes. In 1980, the CRT conducted the first contested proceeding to set rates for the section 115 compulsory license. The CRT increased the then-existing rate by more than 45%, from the statutory 2.75¢ rate per phonorecord to 4¢ per phonorecord. 45 FR 63 (Jan. 2, 1980).[6] By 1986, the CRT had increased the mechanical rate to the greater of 5¢ per musical work or .95¢ per minute of playing time or fraction thereof. 46 FR 66267 (Dec. 23, 1981); *see* 37 CFR 255.3(a)–(c). The next adjustment of the section 115 rates was scheduled to begin in 1987. However, the parties entered into a settlement setting the rate at 5.25¢ per track beginning on January 1, 1988, and the CRT established a schedule of rate increases generally based on positive limited percentage changes in the Consumer Price Index every two years over the following 10 years. *See* 52 FR 22637 (June 15, 1987). The rate increased until 1996, when the rate was set at 6.95¢ per track or 1.3¢ per minute of playing time or fraction thereof. *See* 37 CFR 255.3(d)–(h).

The rates set by the 1987 settlement were to expire on December 31, 1997. The Librarian of Congress announced a negotiation period for copyright owners and users of the section 115 license in late 1996. The parties reached a settlement regarding rates for another ten-year period to end in 2008.[7] Under the settlement, ultimately adopted by the Librarian, the parties agreed to a rate for physical phonorecords of 7.1¢ per track and established a schedule for fixed rate increases every two years for a 10-year period. At the beginning of January 2006, the mechanical rate was the larger of 9.1¢ per track or 1.75¢ per minute of playing time or fraction thereof. *See* 37 CFR 255.3(i)–(m); *see also* 63 FR 7288 (Feb. 13, 1998).

In 2006, with expiration of the previous settlement term nearing, the Judges commenced a proceeding to adjust the mechanical rates under section 115. On January 26, 2009, they issued a Determination, effective March 1, 2009. In that Determination, the Judges noted that the parties had settled their dispute regarding rates and terms for conditional downloads, interactive streaming, and incidental digital phonorecord deliveries (*i.e.,* rates in the new subpart B) (2008 Settlement). *See* Mechanical and Digital Phonorecord Delivery Rate Determination, 74 FR 4510, 4514 (Jan. 26, 2009) (*Phonorecords I*). The parties who negotiated the 2008 Settlement included the National Music Publishers Association (NMPA) and the Digital Music Association (DiMA), the trade association representing its member streaming services. Written Direct Testimony of Rishi Mirchandani, Trial Ex. 1, at ¶ 59 (Mirchandani WDT).

The 2008 Settlement rates that the Judges adopted maintained the existing rate and rate structure at the greater of 9.1¢ per song or 1.75¢ per minute of playing time (or fraction thereof) for physical phonorecords and permanent digital downloads (PDD). The Judges also adopted a license rate of 24¢ per ringtone, a newly regulated product. 74 FR at 4515. Physical sales, PDDs, and ringtones were included in subpart A of the regulations.

In 2011, the Judges commenced a proceeding to again determine section 115 royalty rates and terms. *See* 76 FR 590 (Jan. 5, 2011). The participants in that proceeding negotiated a settlement (2012 Settlement) that carried forward the existing rates and added a new subpart C to the regulations to cover several newly regulated service offering categories, *viz.,* limited offerings, mixed service bundles, music bundles, paid locker services, and purchased content locker services.[8] The Judges adopted the participants' settlement in 2013. *See* Adjustment of Determination of Compulsory License Rates for Mechanical and Digital Phonorecords, 78 FR 67938 (Nov. 13, 2013) (*Phonorecords II*).

The present section 115 proceeding is the third since the establishment of the Copyright Royalty Board (CRB) program

[3] In 1993, Congress abolished the CRT and replaced it with copyright arbitration royalty panels (CARPs). Copyright Royalty Tribunal Reform Act of 1993, Public Law 103–198, 107 Stat. 2304. In 2004, Congress abolished the CARP system and replaced it with the Copyright Royalty Judges. Copyright Royalty and Distribution Reform Act of 2004, Public Law 108–419, 118 Stat. 2341.

[4] Public Law 104–39, 109 Stat. 336.

[5] For clarity, references to the regulations applicable to the sec. 115 license are to the regulations as configured before conclusion of the present proceeding. The Judges discuss appropriate regulatory changes in section VII of this determination.

[6] The United States Court of Appeals for the District of Columbia Circuit affirmed the CRT. *Recording Industry Ass'n. of America* v. *Copyright Royalty Tribunal,* 662 F.2d 1 (D.C. Cir. 1981) (*1981 Phonorecords Appeal*) (remanded on other grounds).

[7] The Librarian initiated the 1996 proceeding during the CARP period, when controversies regarding royalty rates and terms were referred to privately retained arbitrators.

[8] Once again, the parties to the negotiations included the NMPA and DiMA. Mirchandani WDT at ¶ 59.

under the Copyright Royalty and Distribution Reform Act of 2004.[9] In the *Phonorecords II* settlement, the parties agreed that any future rate determination presented to the Judges for subparts B and C service offering configurations would be a *de novo* rate determination. *See* 37 CFR 385.17, 385.26 (2016).

*C. Statement of the Case*

In response to the Judges' notice commencing the present proceeding, 21 entities filed Petitions to Participate.[10] The participants engaged in negotiations and discovery. On June 15, 2016, some of the participants [11] notified the Judges of a partial settlement with regard to rates and terms for physical phonorecords, PDDs, and ringtones, the service offerings covered by the extant regulations found in subpart A of part 385. The Judges published notice of the partial settlement [12] and accepted and considered comments from interested parties.[13]

On October 28, 2016, NMPA, Nashville Songwriters Association International (NSAI), and Sony Music Entertainment (SME) filed a Motion to Adopt Settlement Industry-Wide. The motion asserted that SME, NMPA, and NSAI had resolved the issue raised by SME in its response to the original notice. The Judges evaluated the remaining objection to the settlement filed by George Johnson dba GEO Music Group (GEO) and found that GEO had not established that the settlement agreement ''does not provide a reasonable basis for setting statutory rates and terms.'' *See* 17 U.S.C. 801(b)(7)(A)(iii). As a part of the second settlement, SME withdrew from this proceeding. The Judges published the agreed subpart A regulations as a Final Rule on March 28, 2017.[14]

During the course of the present proceeding, the Judges dismissed some participants and other participants withdrew. Remaining participants at the time of the hearing were NMPA and NSAI, representing songwriter and publisher copyright owners (Copyright Owners) and GEO, a songwriter/publisher/copyright owner, appearing *pro se.* Copyright licensees appearing at the hearing were Amazon Digital Services, LLC (Amazon), Apple Inc. (Apple), Google, Inc. (Google), Pandora Media, Inc. (Pandora), and Spotify USA Inc. (Spotify), (collectively, the Services).

Beginning on March 8, 2017, the Judges conducted a hearing that concluded on April 13, 2017. During the course of the hearing, the Judges heard oral testimony from 37 witnesses.[15] The Judges admitted over 1,100 exhibits, exclusive of demonstrative or illustrative materials the participants offered to explicate oral testimony. The participants submitted Proposed Findings of Fact (PFF) and Proposed Conclusions of Law (PCL) on May 12, 2017, and Replies to those filings on May 26, 2017. Under 37 CFR 351.4(b)(3), a participant may amend its rate proposal at any time up to and including the time it files proposed findings and conclusions. In this proceeding, Copyright Owners and Google filed amended rate proposals contemporaneously with their respective PFF and PCL. The parties delivered closing arguments on June 7, 2017.

Based on the record of this proceeding, the Judges have determined that the mechanical license rate shall be an All-In rate derived from a Greater-Of rate structure. Weighing the advantages and disadvantages highlighted by the participants in this proceeding, the Judges conclude that a rate that balances a percent-of-service revenue with a percent-of-TCC (total cost of content) shall be the basis for the All-In phonorecords royalty. The mechanical portion of the royalty shall be the greater of those figures, *less* the actual amount services pay for the phonorecord performance right. The Judges have no role in setting the performance right license rates. Further, performance right licensees pay the performance royalties to music publishers and songwriters. Services pay mechanical royalties primarily to music publishers.

## II. Context of This Proceeding

*A. Changes in Music Consumption Patterns and Revenue Allocation*

In recent years, music consumption patterns have undergone profound shifts—first from purchases of physical albums to downloads of digital singles, and then from downloads to on-demand access through digital streaming services. These shifts in music consumption patterns have led to corresponding changes in the magnitude and relative mix of income streams to copyright owners; in particular, copyright owners note an increased reliance on performance royalties as compared to reproduction and distribution royalties. Witness Statement of David M. Israelite, Trial Ex. 3014, ¶ 63 (Israelite WDT).

While earlier format changes (piano rolls to wax cylinders to lacquer or vinyl discs to CDs) had altered the way households consumed music, they did not fundamentally alter the distribution of music. For all these music formats, copyright owners distributed music to consumers physically, either directly or through record stores. In addition, with the exception of ''singles,'' after conversion to the vinyl format, purveyors of music typically distributed a bundle of songs (an album). Witness Statement of Bart Herbison, Trial Ex. 3015, ¶ 20 (Herbison WDT).

By the early 2000s, digital data compression and higher-bandwidth internet connections allowed relatively fast transmission of recorded music files over the internet, drastically altering the distribution and consumption of music. Music services [16] began to offer individual tracks or songs online as ''digital downloads.'' In 2008, approximately 435 million albums were sold in the U.S. (both digital and physical). By 2015, that number fell to 249 million.[17] Sales of singles, by

[9] Public Law 108–419, 118 Stat. 2341.

[10] Initial Participants were: Amazon Digital Services, LLC (Amazon); Apple, Inc. (Apple); Broadcast Music, Inc. (BMI); American Society of Composers, Authors and Publishers (ASCAP); David Powell; Deezer S.A. (Deezer); Digital Media Association (DiMA); Gear Publishing Company (Gear); George Johnson d/b/a/GEO Music Group (GEO); Google, Inc. (Google); Music Reports, Inc. (MRI); Pandora Media, Inc. (Pandora); Recording Industry Association of America, Inc. (RIAA); Rhapsody International Inc.; SoundCloud Limited; Spotify USA Inc.; ''Copyright Owners'' comprised of National Music Publishers Association (NMPA), The Harry Fox Agency (HFA), Nashville Songwriters Association International (NSAI), Church Music Publishers Association (CMPA), Songwriters of North America (SONA), Omnifone Group Limited; and publishers filing jointly, Universal Music Group (UMG), Sony Music Entertainment (SME), Warner Music Group (WMG).

[11] The settling parties were: NMPA, NSAI, HFA, UMG, and WMG. As part of the settlement agreement, UMG and WMG withdrew from further participation in this proceeding.

[12] *See* 81 FR 48371 (Jul. 25, 2016).

[13] Three parties filed comments. American Association of Independent Music (A2IM), Sony Music Entertainment (SME), and George Johnson dba GEO Music Group (GEO). A2IM urged adoption of the settlement and SME approved of all but one provision of the settlement. GEO objected to the settlement.

[14] *See* 82 FR 15297 (Mar. 28, 2017).

[15] By stipulation of the participants, the Judges also accepted and considered written testimony from six additional witnesses who did not appear. Amazon designated and other participants counter-designated testimony from the *Phonorecords I* proceeding, which was admitted as Exhibits 321 and 322.

[16] Digital download sales gained popularity in 2003 when Apple introduced the iTunes Music Store. The iTunes Store provided a convenient way for iTunes users to purchase a song or an entire album, legally, with a single click of the computer mouse. The iTunes Store also allowed users of Apple's iPod to sync songs directly to the device. Expert Report of Jui Ramaprasad, Trial Ex. 1615, at 25–26 (Ramaprasad WDT). Prior to the launch of the iTunes Music Store, virtually all music was sold as albums. Eisenach WDT at 44, n.58.

[17] Some evidence in the record suggests, however, that since 2013, with the inclusion of ''streaming

contrast, have remained fairly stable over the same period, averaging approximately one billion per year from 2008 to 2015 (with a peak of 1.4 billion in 2012). Expert Report of Jeffrey A. Eisenach, Trial Ex. 3027, at ¶ 67 & Table 4 (Eisenach WDT).

Changes in consumption patterns have had an impact on industry revenues. For example, between 2004 and 2015, record label revenues from physical sales declined from $15.3 billion to $2 billion, while digital revenues increased from $230 million to about $4.8 billion. *Id.* at ¶ 44. In 2004, over 98% of music industry revenue was the result of physical sales. Copyright and the Music Marketplace: A Report of the Register of Copyrights 70 (Feb. 2015) (Register's Report), citing RIAA-sourced chart.[18] Digital downloads made up most of the remaining revenue. *Id.* By 2013, revenues from physical sales fell to 35% of industry total revenues.[19] Digital downloads, which made up 1.5% of industry revenues in 2004, had climbed to 40% of industry revenues.

Changes in music consumption patterns have coincided with an increase in the use of musical works. Review of relevant market factors imply, however, that the ways in which those works are used currently do not compensate copyright owners as well as they did in the past. *See* Register's Report at 72–74.[20]

*B. Emergence of New Streaming Services*

Many diverse enterprises have launched music streaming services to meet growing consumer demand for streaming. Currently, there are at least 31 music streaming services available from 20 identifiable providers. Some of the well-known of these include: Amazon, Apple, Google (and its recently acquired YouTube), Deezer (partnered with Cricket/AT&T), iHeartRadio, Napster, Pandora, SoundCloud, Spotify, and Tidal (partnered with Sprint). Written Rebuttal Testimony of Jim Timmins, Trial Ex. 3036, ¶ 20 (Timmins WRT). Most of the companies entering the on-demand streaming music market have done so recently. *Id.* ¶ 21. In the last five years, new entrants to the market have initiated at least five interactive streaming services, joining Spotify which launched in the United States in 2011. *See id.* ¶ 22.

The largest players in the interactive streaming market by song catalog are Apple Music, Google Play, and Spotify, each of which each has a catalog that exceeds [REDACTED] million songs. Tidal, which provides an outlet for unsigned artists,[21] has a catalog of over 40 million songs. *See* Written Direct Testimony of Michael L. Katz, Trial Ex. 885, ¶ 34, Table 1 (Katz WDT). By one estimate, in 2016 there were 18 million U.S. on-demand subscribers: Spotify accounted for [REDACTED] million, followed by Apple Music (4 million), Rhapsody and Tidal (2 million each) and all others accounting for the remaining 4 million. *See id.*

Some of the services that offer music streaming are pure-play music providers, such as Spotify and Pandora.[22] Others, such as Amazon, Apple Music, and Google Play Music, are part of wider economic "ecosystems," in which a music service is one part of a multi-product, multi-service aggregation of activities, including some that are also related to the provision of a retail distribution channel for music. For example, Amazon is a multi-faceted internet retail business. Amazon offers a buyers' program for an annual fee (Amazon Prime) that affords loyalty benefits to members, such as free or reduced rate shipping or faster delivery on the products members purchase. Amazon Prime reportedly has approximately [REDACTED] subscribers.[23] For its music service offering, Amazon bundles interactive streaming at no additional cost with its Prime membership. In addition to the Prime Music service offering, Amazon's U.S.-based business also includes a physical music store, a digital download store, a purchased content locker service, Amazon Music Unlimited (a full-catalog subscription music service), and Amazon Music Unlimited for Echo (a full-catalog subscription service available through a single Wi-Fi enabled device, Amazon Echo).[24] In launching Prime Music, Amazon relied on the section 115 license as it did for Amazon Music Unlimited and Amazon Music Unlimited for Echo.[25]

Google describes its "Google Play" offerings as its "one-stop-shop" for the purchase of Android applications. The Google Play Store allows users to browse, purchase, and download content, including music. Google Play Music is Google Play's entire suite of music service offerings. Google Play Music, launched in 2011, is bundled with the YouTube Red video service subscription.[26] It includes several functionalities: (1) A Music Store; (2) a cloud-based locker service; (3) an on-demand digital music streaming service; and (4) a section 114 compliant non-interactive digital radio service (in the U.S.).[27] Levine WDT, Trial Ex. 692, ¶ 43.

The evidence is conflicting regarding whether the market for streaming services is faring poorly financially or performing about the same as other emerging industries. *See, e.g.,* Timmins WRT, Trial Ex. 3036, ¶¶ 16–17; Levine WDT ¶ 16 ("streaming music services generally remain unprofitable businesses" with content acquisition costs being "the biggest barrier to profitability.") For example, Spotify, one of the largest pure-play streaming services, has reportedly [REDACTED]. Katz WDS at ¶ 65. Some estimates place

equivalent" albums, overall album consumption may have increased. *See* Katz WDT at 42.

[18] The Judges cite the Register's Report as a source of industry background, developed by the Register of Copyrights following public hearings held nationwide in 2013 and 2014. The Judges do not base their conclusions in this Determination on any background information from the Register's Report that the parties did not also present as evidence in this proceeding.

[19] Industry total revenues in this analysis include digital downloads (40%), physical sales (35%), subscription and streaming (21%), and ringtones and ringbacks (1%). Copyright and the Music Marketplace at 70, citing RIAA-sourced chart.

[20] Musical works copyright owners complain that streaming services are at least partially responsible for the paucity of revenues that the musical works generate for writers and publishers. They blame streaming services' business practices that favor growth in user base and market share over maximizing profitability. Digital services counter that they pay a substantial portion of the revenues they receive to license copyrighted works and compete with terrestrial radio, which is exempt from paying performance royalties. Digital services and broadcasters also argue that the lack of royalty compensation that makes its way to content creators is due in large part to the content creators' agreements with intermediaries, which, they argue, keep a large portion of royalties earned by content creators for their own account or to recoup advances. *Id.* at 76–77.

[21] An "unsigned artist" is one recording music but not under contract to a recording company.

[22] Until late 2016, Pandora operated as a noninteractive streaming service that, did not incur a compulsory license fee for mechanical royalties. Pandora recently began offering more interactive features, including a full on-demand tier. Pandora WDS Introductory Memo at 1–2; Written Direct Testimony of Christopher Phillips, Trial Ex. 877, at 8 (Phillips WDT).

[23] Amazon Prime is a $99-per-year service that offers Amazon customers access to a bundle of services including free two-day shipping, video streaming, photo storage and e-books, in addition to Prime Music. Expert Report of Glenn Hubbard, Trial Ex. 22, at 15 (Hubbard WDT).

[24] Mirchandani WDT at 5.

[25] 3/15/17 Tr. 1315–16 (Mirchandani).

[26] Google's experience with music licensing dates at least far back as 2006, when it acquired YouTube. Written Direct Testimony of Zahavah Levine, Trial Ex. 692, at 3 (Levine WDT). Google's music services were part of Google's Android Division but were recently combined within the YouTube business unit. *Id.* at 3–4.

[27] Section 114 of the Act includes requirements for the compulsory license to perform digitally sound recordings over noninteractive internet music streaming services.

Spotify's market value at more than $8 billion, suggesting perhaps, investors' expectations regarding future profits. Written Rebuttal Testimony of Marc Rysman, Trial Ex. 3032, ¶ 11, n.3 (Rysman WRT).[28] Spotify forecasts being profitable in [REDACTED]. *Id.* at ¶ 65 n.80.

*C. Effects of Streaming on Publishers' and Songwriters' Earnings*

Although many songwriters perform their own musical works, it is also common for songwriters to compose songs to be performed by others. Songwriters typically enter into contractual arrangements with music publishers, which promote and license the songwriters' works and collect royalties on their behalf. Music publishers and songwriters negotiate a split of the royalty payments. In some cases, songwriters are commissioned to write a song and are compensated with a flat fee for the work in exchange for giving up ownership rights to the song and any royalties it might earn.

The four largest publishers—Sony/ATV, Warner/Chappell, Universal Music Publishing Group, and Kobalt Music Publishing—collectively accounted for just over 73 percent of the top 100 radio songs tracked by Billboard [29] as of the second quarter in 2016. In addition, there are several other significant publishers, including BMG and Songs Music Publishing, and many thousands of smaller music publishers and self-publishing songwriters. *See* Katz WDT ¶ 46.

Songwriters have three primary sources of ongoing royalty income, which they generally share with music publishers: Mechanical royalties, synchronization (''synch'') royalties for use of their works in conjunction with video or film, and performance royalties.[30] *See* Katz WDT ¶ 41; Copyright and the Music Marketplace at 69. Songwriters who are also recording artists receive a share of revenues from their record labels for the fixing of the musical work in a sound recording. Sound recording royalties include those from the sale of physical and digital albums and singles, sound recording synchronization, and digital performances. *Id.* Recording artists can also derive income from live performances, sale of merchandise, and other sources. *Id.* at 69–70.

The shift in consumption from physical sales to streaming coincided with a reallocation of publisher revenue sources. In 2012, 30% of U.S. music publisher revenues came from performance royalties and 36% from mechanical royalties, with the rest coming from synch royalties and other sources. *See* Register's Report at 70. By 2014, 52% of music publisher revenues came from performance royalties [31] while 23% came from musical works mechanical royalties, with the remainder coming from synchronization royalties and other sources. *Id* at 71, n.344, *citing* NMPA press release. By one estimate, mechanical license revenues from interactive streaming services accounted for only [REDACTED] percent of total music publishing revenues in 2015. Katz WDT ¶ 42.[32]

Evidence in the present record indicates that total publishing revenue declined by [REDACTED] percent between 2013 and 2014, but increased by [REDACTED] percent between 2014 and 2015. *See* Katz WDT ¶ 58. Large publishers, such as Sony/ATV, UMPG, and Warner Chappell, were [REDACTED] in 2015, earning a combined $[REDACTED] million from U.S. publishing operations for that year. *Id.* ¶ 59.

**III. The Present Rate Structure and Rates**

Subpart B of the current regulations contains mechanical royalty rates payable for the delivery and offering of interactive streams and/or limited downloads. There are three product distinctions within the subpart B rate structure:

- Portable *vs.* Nonportable Services
- Bundled *vs.* Unbundled Services
- Subscription *vs.* Ad-Supported Services

37 CFR 385.13. The regulations also separate certain promotional uses for separate treatment, setting the rate for those promotional uses at zero.

Each of these offering characteristics can be combined independently with almost every other characteristic, resulting in a very complex web of rate calculations. In the 2012 Settlement, the parties structured rate calculations for both subpart B and subpart C into three arithmetic segments.

In the first step of the calculation, the parties determine the All-In royalty pool; that is, the royalty that would be payable based on a formula balancing the greater of a percent-of-service revenue and a percentage of one of two other expense measures. One expense measure if a percent-of-royalties services pay to record companies for sound recording performance rights, differing depending upon whether the sound recording licenses are pass-through or not pass-through. For certain subscription services, the percent-of service revenue is balanced against the lesser of two or three other potential mathematical outcomes.[33]

The second calculation reduces the All-In royalty pool to the ''payable'' royalty pool in a two-step process. First the parties subtract royalties the services pay for musical works performance rights from the All-In royalty established in the first calculation. This remainder is considered the payable royalty pool for certain service offerings; *viz.,* non-subscription, ad-supported, purchased content lockers, mixed service bundles, and music bundles. For subscription service offerings, whether standalone or bundled, and depending upon whether the offering is portable or non-portable, streaming only or mixed use, determining the payable royalty pool requires a balancing of the mechanical remainder against a set rate for ''qualified'' subscribers per month to determine the greater-of result. The set rate for qualified subscribers differs for each variation of subscription offering.

The final step in the rate determination for each service offering is an allocation among licensors based upon the number of plays from each licensor's catalog.[34]

The Services, the licensor participants in the present proceeding, refer to this convoluted process as the establishment of royalty rates with ''minima.'' According to the Services, these minima are designed to protect copyright owners from the potential downside of Services' business models that might

[28] In 2016, Spotify had over [REDACTED] million monthly active users, [REDACTED]% of which were in the U.S. [REDACTED] million of those U.S. users were also Premium subscribers. Written Direct Testimony of Barry McCarthy, Trial Ex. 1060, ¶ 2 (McCarthy WDT).

[29] This Billboard measure tracks songs played on AM–FM terrestrial radio broadcasters, which are not required to license the works or the sound recordings they play.

[30] Another revenue source is folio licenses, lyrics, and musical notations in written form. *See* Katz WDT ¶ 31.

[31] Performance royalties are administered primarily by Performing Rights Organizations acting as collectives and clearinghouses for songwriters and publishers as licensors, and broadcasters and streaming services as licensees.

[32] It is noteworthy that the shift from mechanical royalties to performance royalties coincides with the shift from sales of physical phonorecords (*e.g.,* CDs) and downloads, for which no performance royalty is required, to the use of interactive streaming, which pays both a mechanical royalty (when a DPD results) and a performance royalty, and to the use of noninteractive streaming, which historically pays only a performance royalty but no mechanical royalty.

[33] The lesser-of prongs include a per-subscriber per month prong and percent-of-service payments for sound recording royalties, differing depending upon whether the sound recording licenses are pass-through or not pass-through.

[34] Calculation of royalties for paid locker services varies slightly from this formula, but the complexity is similar.

minimize service revenue and thus manipulate the percent-of-service revenue rate standard. The Services, whose current royalty payments are determined under the minima prongs of the formulae, point to the minima as a reason to keep the percent-of-service revenue ''headline'' rate low, reasoning that the headline rate is not, or is rarely, binding in any event.

Notwithstanding the parties' prior agreement to the apparent complexity, the alternative calculation methods, or the variations in the descriptions of the service offerings, evidence presented in this proceeding does not support continuing the fractionalization of the rate determination for the service offerings at issue. At the conclusion of the tortured rate calculations required by the present regulations, the evidence suggests that differences in the rates Services pay are not great enough to justify the complexity of the formulae. Some of the rate determination prongs are rarely if ever triggered. Despite the myriad configurations of rate calculations, some of the service offerings are incapable of categorization under the extant rate structure. Apple and Google entered the digital music delivery marketplace by negotiating direct licenses covering several compulsory licenses, avoiding the regulatory scheme entirely.

## IV. Analysis of Rate Structure Proposals

### *A. Parties' Proposals*

#### 1. The Services (Excluding Apple and Google)

The Services propose rates and rate structures that, while varying in their particulars, share a number of common elements. Broadly, the Services propose a rate structure that, in the main, continues the current rate structure. More particularly, the Services' proposals share core elements: (1) An ''All-In'' rate for mechanical and performance rights; (2) based upon a 10.5 percent-of-service revenue headline rate with minima; (3) *without* a ''Mechanical Floor.''

#### a. Amazon

In its Proposed Rates and Terms (Amazon Proposal), Amazon proposes that the rate structure as currently in the applicable regulations rollover into the 2018–22 rate period, except: (1) The per subscriber minimum and/or subscriber-based royalty floors for a ''family account'' should equal 150% of the per subscriber minimum and/or subscriber-based royalty floor for an individual account; (2) a student subscription account discount of 50% should be included in the regulations to the per subscriber minimum and subscriber-based royalty floor that would otherwise apply under the current regulations; (3) a discount for annual subscriptions equal to 16.67% of the minimum royalty rate (or rates) and subscriber-based royalty floor (or floors) that would otherwise apply under § 385.13; and (4) 15% discount to the minimum royalty rate (or rates) and subscriber-based royalty floor (or floors) to reflect a service's actual ''app store'' and carrier billing costs, not to exceed 15% for each. Amazon Proposal at 1–2.

#### b. Pandora

Pandora's amended proposed rates and terms (Pandora Amended Proposal),[35] seek the following changes from the current regulations: (1) Elimination of the ''Mechanical Floor;'' (2) elimination of the alternative computation of sub-minima I and II now in § 385.13 and in § 385.23 (for subparts B and C, respectively) ''in cases in which the record company is the section 115 licensee;'' (3) A broadening of the present ''not to exceed 15%'' reduction of ''Service Revenues'' in § 385.11 to reflect, *in toto,* an exclusion of costs attributable to ''obtaining'' revenue, ''including [but not expressly limited to] credit card commissions, app store commissions, and similar payment process charges;'' [36] and (4) a discount on minimum royalties for student plans ''not to exceed 50%'' off minimum royalty rates set forth in § 385.13. *Id.* at 1, 7.

#### c. Spotify

In its amended proposed rates and terms, Spotify proposed the following changes from the current regulations: (1) Removal of the ''Mechanical Floor'' for all licensed activity; and (2) a broadening of the present ''not to exceed 15%'' reduction of ''Service Revenues'' in § 385.11 to reflect, *in toto,* an exclusion of the actual costs attributable to ''obtaining'' revenue, ''including [but not expressly limited to] credit card commissions, app store commissions similar payment process charges, and actual carrier billing cost.'' *See* Second Amended Proposed Rates and Terms of Spotify USA Inc., *passim.*

#### 2. Apple

Apple proposed that the Services pay $0.00091 for each nonfraudulent stream of a copyrighted musical work lasting 30 seconds or more. Apple Inc. Proposed Rates and Terms (as amended) at 3–4 (Apple Amended Proposal). Apple proposed defining a use as any play of a sound recording of a copyrighted work lasting 30 seconds or more. Additionally, Apple proposed an exemption for a ''fraudulent stream,'' which it defined as ''a stream that a service reasonably and in good-faith determines to be fraudulent.'' *Id.* at 2. For paid locker services, Apple proposes a $0.17 per subscriber fee, also as a component of an All-In musical works royalty rate that would include the ''subpart C'' royalty. *Id.* at 7–8. For purchased content locker services, Apple proposed a zero royalty fee. *Id.* at 7.

#### 3. Google

In its amended proposed rates and terms (Google Amended Proposal),[37] Google parts company with the other Services and proposes that the rate structure ''eliminat[e] . . . different service categories'' in both subparts B and C and replace them with ''a single, greater-of rate structure between 10.5% of net service revenue and an uncapped 15-percent TCC component.'' Google Amended Proposal at 1.[38] That 15% TCC rate is reduced to 13% for pass-through licenses (*i.e.,* where a record company is the licensee under section 115, and the record company has granted streaming rights to a service). Id. at 33–34. Google's proposed rate does not include a ''Mechanical Floor.'' Similar to one of Amazon's proposals, Google also seeks a discount in rates for ''carrier billing costs'' and ''app store commissions,'' plus ''credit card commissions'' and ''similar payment process charges,'' all not to exceed 15%. *Id.* at 6 (for subpart B); 26 (for subpart C).[39] In addition, Google's proposal includes a zero rate for certain free trial periods. Id. at 35–37.

[35] The Pandora Amended Proposal superseded its original proposal filed on November 1, 2016, by adding definitions (for ''fraudulent streams'' and ''play'') that do not directly relate to the royalty rates. *See* Pandora PFF/PCL, Appx. C.

[36] Pandora does not expressly describe this change as a change in rates *per se.*

[37] The Google Amended Proposal amended its original proposal filed on November 1, 2016. Google originally proposed a subpart B rate structure that generally followed the existing structure. Google Written Direct Statement, Introductory Memorandum at 3 (Nov. 1, 2016).

[38] ''TCC'' is an industry acronym for ''Total Content Cost'', a shorthand reference to the extant regulatory language describing generally the amount paid by a service to a record company for the section 114 right to perform digitally a sound recording. Google's proposed regulatory terms retain some of the distinctions in service offerings for purposes of computing per-work royalty allocations. See, *e.g.,* id. at 29–31. This does not affect the total royalty charged to the service.

[39] Google describes this proposed change as a change in the definition of ''Service Revenue,'' unlike Amazon, which described its proposed 15% discount as a change in rates. The difference is mathematically irrelevant.

4. Copyright Owners (Excluding GEO)

The Copyright Owners proposed that the Judges adopt a unitary rate structure for all interactive streaming and limited downloads that are currently covered by subparts B and C.[40] Copyright Owners' Amended Proposed Rates and Terms, at 3 (May 11, 2017) (CO Amended Proposal). The Copyright Owners structured the proposal as the greater-of a usage charge and a per-user charge. Specifically, under the Copyright Owners' proposal, each month the licensee would pay the greater of (a) a per-play fee ($0.0015) multiplied by the number of interactive streams or limited downloads during the month and (b) a per-end user[41] fee ($1.06) multiplied by the number of end users during the month. *Id.* at 8. The license fee would be for mechanical rights only, and would not be offset by any performance royalties that the licensee paid for the same activity. *Id.*

5. GEO Music Group

The Judges accepted written and oral testimony from Mr. George Johnson dba GEO Music Group. Mr. Johnson appeared *pro se.* Mr. Johnson is a self-employed songwriter, music publisher, and performer, who formerly operated his own recording company.[42] The other participants in the proceeding agreed to preserve objections to Mr. Johnson's testimony to avoid interruptions and to submit any objections in writing after his testimony.

The crux of Mr. Johnson's case is that ''songs and copyrights have real intrinsic value in dollars'' and that current royalty rates do not fairly account for that value. Second Amended Written Direct Statement of George D. Johnson (GEO) for Proposed Subpart C or New Subpart D Rates and Terms at 3 (Johnson Second AWDS). Mr. Johnson proposes what he refers to as a ''Buy Button'' or ''Paid Permanent Digital Song Sale'' (PDS) under a newly created subpart C or subpart D of the applicable regulations. *Id.* at 2. Mr. Johnson contends that the PDS would ''eliminate the unpaid limited download in 37 CFR 385, Subparts B and C.'' *Id.* at 3. Under Mr. Johnson's proposal all ''interactive and non-interactive Subpart B and C streaming services'' would be required to include a ''buy button'' that ''allows customers to voluntarily buy or purchase a work as a permanent paid digital download.'' § 385 Regulation Redline and Changes of George D. Johnson (GEO) at 4 (Feb. 20, 2017) (Johnson Redline and Changes). Mr. Johnson proposes that the cost to the consumer for these permanent paid digital song sales would be, for 2018: $1.00; 2019: $1.50; 2020: $2.00; 2021: $2.50; 2022: $3.00. *Id.*

Mr. Johnson also proposes that proceeds from sales of permanent downloads purchased through the proposed ''buy button'' be allocated to the following groups of interested parties under one of two alternatives (A or B): Artist ($.19 or $.18 per dollar paid by the consumer), ''record'' (presumably the label or record company) ($.21 or $.20), ''AFM'' (presumably American Federation of Musicians) ($.01), ''AFTRA'' (presumably American Federation of Television and Radio Artists) ($.01), Songwriter ($.21 or $.20), Publishers ($.21 or $.20), and Services ($.16 or $.20). *Id.* Mr. Johnson refers to the alternative allocations as royalties but they appear instead to be shares of sales proceeds that he would allocate to what he believes are all of the interested parties. He does not explain why or when alternative A should be applied as opposed to alternative B.

The allocations he proposes would include royalties for the section 112/114 licenses and the section 115 license, divided equally between the section 115 and section 114 copyright owners. Johnson Redline and Changes at 4. However, under his proposal the copyright users (the Services) would still pay a mechanical royalty for streaming performances of ''$.0015, etc.'' Johnson Second AWDS at 4. It is unclear what year the $.0015 rate would apply to and what the ''etc.'' means.[43] In short, Mr. Johnson proposes two alternatives for allocating revenues from sales that might occur if a customer were to buy a song directly from a Service. Under Alternative A, the Services would effectively pay in the aggregate 84% of the PDS revenues to all copyright owners for licenses under both the section 114 (which includes section 112 royalties) and 115. Under Alternative B, the Services would pay 80% of PDS revenues for the same two licenses. Johnson Second AWDS at 4–5.

In his written direct statement Mr. Johnson does not propose any benchmark or other evidence that would justify a ''buy button'' requirement with a rate of 80% or 84% of PDS revenues. He does assert, however, that it is the ''only reasonable proposal that captures the true value of a music copyright today and historically.'' Johnson Second AWDS at 5. Ultimately, Mr. Johnson concedes that the Judges previously rejected his proposal to combine the section 112/114 and 115 rates in *Web IV* and that the proposal continues to be impracticable. 3/9/17 Tr. 433: 2–3, 11–12 (Johnson) (''that didn't happen in *Web IV* and . . . it won't happen here . . . it's so segmented, all the different licenses, it's probably impossible.'').

While the Judges appreciate Mr. Johnson's participation in the proceeding, they must view his proposal through the prism of the Copyright Act. Nothing in section 115 would authorize the Judges to require all Services availing themselves of the section 115 license to include a mandatory ''buy button'' as part of any service offering. Services may install a ''buy button'' if they wish, but the Judges cannot mandate that service business innovation as Mr. Johnson proposes.

Likewise, the Judges have no authority to set the price that Services charge consumers for purchasing a download whether from a PDD service offering or through Mr. Johnson's proposed buy button. Even if the Judges had the authority to impose a ''buy button'' requirement on the Services, it is unclear what purpose that button would serve other than to alert consumers to the possibility of buying a song they happen to stream. The Judges believe consumers of music are already aware that if they want to buy a song they can do so. Perhaps Mr. Johnson believes with a buy button, consumers might be more willing to click on the button and buy the song than if the button were not visible and readily available. Mr. Johnson provides no evidence to support that premise. As for the 80% or 84% combined royalty that Mr. Johnson proposes for the section 112/114 and 115 licenses, he provides no evidence upon which the Judges might base such a royalty other than his belief that it is the ''only reasonable proposal that captures the true value of a music copyright today and historically.'' *See* Johnson Second AWDS at 5. Mr. Johnson's opinion alone is insufficient evidence upon which to support his ''buy button'' proposal.

Given the lack of sufficient substantial and persuasive evidence to support the

[40] The Copyright Owners' rate proposal would apply the subpart A rates to so-called ''music bundles'' (''offerings of two or more subpart A products to end users as part of one transaction'') which are currently covered by subpart C. *Id.* at 3 nn. 2 & 4.

[41] The proposal would consider each paying subscriber to a service, or each active user, to be an ''end user.'' *Id.* at 8–9.

[42] At the time of hearing in the present proceeding, Mr. Johnson had stepped back from his music business and was employed in real estate. *See* 3/9/17 Tr. 418–19 (Johnson).

[43] In his oral testimony, Mr. Johnson appears to concede that if a customer purchased a song and paid whatever price he proposes that an additional streaming rate might not be necessary. 3/9/17 Tr. 432: 14–17 (Johnson) (''my proposal is that if you paid up front . . . you might not need those Subpart B [streaming] rates.'').

GEO proposal, the Judges will not further analyze it.[44] The Judges respectfully decline to adopt Mr. Johnson's proposed approach to rate setting.

*B. Arguments Concerning Elements of the Proposed Rate Structures*

1. Per-Unit Rate

Copyright Owners and Apple emphasize that a per-play royalty rate structure, as compared with a percent-of-revenue structure, provides transparency and simplicity in reporting to songwriters and publishers, because it requires only one metric besides the rate itself, *i.e.,* the number of plays, making it much easier to calculate, report, and understand. *See, e.g.,* Expert Report of Marc Rysman, Trial Ex. 3026, ¶ 56 (Rysman WDT); Wheeler WDT, Trial Ex. 1613, ¶ 19; Expert Report of Anindya Ghose, Trial Ex. 1617, ¶¶ 83–84 (Ghose WDT); Expert Report of Jui Ramaprasad, Trial Ex. 1615, ¶ 41 (Ramaprasad WDT); Witness Statement of Peter Brodsky, Trial Ex. 3016, ¶ 76 (Brodsky WDT); 3/22/17 Tr. 2476–78 (Dorn); 3/23/17 Tr. 2855–56 (Ghose). Relatedly, Copyright Owners argue that a transparent metric tied to actual usage is superior because, under the alternative percent-of-revenue approach, services might manipulate revenue through bundling, discounting, and accounting techniques, or might defer service revenues and emphasize increasing market share rather than profits. *See* Rysman WDT ¶¶ 43–45.

Copyright Owners and Apple contrast their proposed per play approaches with the current rate structure, which they characterize as cumbersome and convoluted. They emphasize that under the current rate structure, the Services must perform a series of different greater of and lesser of calculations, depending on a service's business model, to determine which prong of the rate structure is operative. *See* Copyright Owners' Proposed Findings of Fact (COPFF) (and record citation therein). Copyright Owners assert that because of this complexity, publishers and songwriters cannot easily verify the accuracy of data the Services input when calculating royalty payments. *See* Brodsky WDT ¶ 76; Ghose WDT ¶¶ 80, 81, 82; Ramaprasad ¶¶ 4, 38, 42–44; Rysman WDT ¶ 57; Tr. 2865 (Ghose); Tr. 824 (Joyce); Tr. 247778 (Dorn).

Beyond the issue of complexity, Copyright Owners and Apple argue that interactive streaming services do not need the present *upstream* rate structure in order to adopt any particular *downstream* business model. Rather, Copyright Owners and Apple assert that a per-play structure would establish a level of equality in the royalty rates across the Services, without regard to business models. Songwriters and publishers would be paid on the same transparent, fixed amount without advantaging any one business model over another. 3/23/17 Tr. 2849, 2863 (Ghose). Thus, Copyright Owners and Apple maintain that a royalty based on the number of plays aligns the compensation paid to the creators of the content with actual demand for and consumption of their content. Ghose WDT ¶ 84; Rysman WDT ¶¶ 9, 58; Testimony of David Dorn, Trial Ex. 1611, ¶ 33 (Dorn WDT).

Copyright Owners further argue that the present rate structure's failure to measure royalties based on per-play consumption is counterintuitive, because it permits a decreasing *effective* per-play rate even as the quantity of songs listeners consume via interactive streaming is increasing. Israelite WDT ¶ 39. Copyright Owners note, for example, that listening to [REDACTED] increased from [REDACTED] streams in July 2014 to [REDACTED] streams in December 2016, a [REDACTED] increase in the number of streams. Rebuttal Report of Glenn Hubbard, Trial Exs. 132–33, Ex. 1 and ¶ 2.22 (Hubbard WRT); 4/13/17 Tr. 5971–72 (Hubbard). However, contemporaneously [REDACTED]'s mechanical royalty payments to the Copyright Owners only increased [REDACTED], from $[REDACTED] in mechanical royalties in July 2014 to only $[REDACTED] in December 2016. Hubbard WRT ¶ 3.9; 4/13/17 Tr. 5971–73 (Hubbard). The upshot, Copyright Owners assert, is that, as streaming consumption increased dramatically from 2014 to 2016, the effective per stream mechanical royalties paid by [REDACTED] to Copyright Owners decreased from [REDACTED] per hundred streams in July 2014 to [REDACTED] per hundred streams in December 2016—only [REDACTED]% of the effective per stream rate in July 2014. 4/13/17 Tr. 5972–73 (Hubbard).

The Services made four arguments in opposition to the use of a per-play royalty rate. The overarching theme of these arguments is that an inflexible ''one size fits all'' rate structure would be ''bad for services, consumers, and the copyright owners alike.'' *See* Services' Joint Proposed Findings of Fact (SJPFF) at 89.

First, the Services argued that an upstream per-play rate would not align with the downstream demand for ''all-you-can-eat'' streaming services. As Professor Marx testified, a per stream fee introduces a number of distortions and inefficiencies, encouraging a capping of downstream plays and reduces incentives for services to meet the demand of consumers ''who are going to stream a lot of music.'' Written Direct Testimony of Leslie Marx, Trial Ex. 1065, ¶¶ 130–131 (Marx WDT). In this vein, Pandora's then-president, Michael Herring, noted that a per-play consumption-based model where the revenue is fixed creates uncertainty and volatility, which discourage investment and hamper profitability. 3/14/17 Tr. 894–95 (Herring). Mr. Herring noted that this is a general economic problem that occurs when a retail subscription business has fixed subscription revenues per customer, but variable (and unpredictable) costs derived from variable (and unpredictable) downstream usage. Written Rebuttal Testimony of Michael Herring, Trial Ex. 888, at ¶ 17 (Herring WRT); 3/14/17 Tr. 894–98 (Herring); *see* Mirchandani WDT ¶ 39 (one-size-fits-all rate is not ''offering agnostic'' as Copyright Owners claim, but rather is ''offering determinative.'').

Second, the Services argued that there is no ''revealed preference'' in the marketplace for a per-play royalty rate structure for licensing musical works or sound recordings rights, as opposed to a percent-of-revenue (with minima) royalty structure. In particular, they contended that mechanical royalties have never been set on a per-play basis. *See* Herring WRT ¶ 19. The Services also pointed to the interactive services' direct licenses with music publishers, PROs and record companies, claiming that all rely on a percent-of-revenue royalty calculation. SJPFF ¶¶ 174–175 (and record citations therein). They acknowledged that some of the direct license agreements with record companies contain alternative per-user prongs but they noted that this is consistent with the existing rate structure which already contains a per-subscriber minimum, but not a per-play prong. *Id.* ¶ 175. Further, the Services noted that Apple, which is proposing a per-play rate, in fact has [REDACTED]. *See* 3/23/17 Tr. 2857 (Ghose); 3/22/17 Tr. 2479 (Dorn).

[44] Mr. Johnson's oral testimony went well beyond his ''buy button'' proposal and included criticism of the current Copyright Act as well as criticism of the Services' rate proposals and business models and other concerns about the music industry more generally. While the Judges considered Mr. Johnson's testimony in determining the appropriate royalty rates for the upcoming rate period, as a lay witness sponsored by no party other than himself the Judges placed little weight on his opinions regarding the various rate proposals of the Services and the condition of the industry. As for his criticism of the Copyright Act, those opinions are more appropriately directed to Congress.

Third, the Services discounted the argument that Copyright Owners' proposed rate structure is superior to the present rate structure because the latter is too complicated or cumbersome. They characterized this criticism as ''overblown'' and assert that any problems arising in the use of a revenue-based headline rate is mitigated by the inclusion of per subscriber and TCC minima. SJPFF ¶ 174. They further noted that section 801(b)(1) does not list as a criterion or objective that the rates be simple, easy to understand, or otherwise ''transparent.'' Services' Joint Reply to Apple PFF (SJR(Apple)) at 34, 36. Thus, they argued, the Judges cannot jettison an otherwise appropriate rate structure because some unquantified segment of the songwriting community might be uncertain as to how their royalties were computed.

Separate from these four arguments against per-play rate proposals, the Services noted a practical problem related to Apple's specific proposal: Apple's proposal calls for deducting performance royalties from the per-play mechanical royalty, yet it does not explain how to convert the typical percent-of-revenue performance royalty into a per play rate in order to perform that computation.[45] The Services noted that Apple Music's Senior Director, David Dorn, was unable to explain how this calculation would be made. *See* 3/22/17 Tr. 2508–09 (Dorn). Thus, the Services asserted that Apple's proposal would introduce ''more complexity, not less,'' SJR (Apple) at 34.

2. Flexible Rate

The Services propose a rate structure for configurations in extant subparts B and C that follows the structure in the existing regulations adopted after the 2012 Settlement.[46] The Services asserted that they are not advocating preservation of the basics of the settlement rate structure merely to preserve the *status quo. See* 3/13/17 Tr. 564 (Katz). Rather, the Services, through their economic experts, argue that the settlement rate structure as an appropriate benchmark for the Judges to weigh, consider, adjust (if appropriate), and apply or reject, as they would any proffered benchmark. The Services note that considering the current rate structure as a benchmark is instructive because it allows for identification of market value by analogy. The Services assert that examination of a comparable circumstance obviates the need for experts and the Judges to build a theoretical model from the ''ground up.'' *See* 3/13/17 Tr. 691–2 (Katz).

The Services' experts opine that, for a number of reasons, the 2012 rate structure is a highly appropriate benchmark. First, they note that it applies to (1) the same rights; (2) the same uses; and (3) the same types of market participants. *See* 3/15/17 Tr. 1082–83 (Leonard); 3/13/17 Tr. 551, 566–67 (Katz). Additionally, the Services maintain that because the 2012 rate structure resulted from a negotiated settlement, it reflects market forces, including an implicit consensus on such issues as substitutional effects. *See* 3/13/17 Tr. 580, 722 (Katz). More broadly, the Services assert the 2012 Settlement demonstrates the ''revealed preferences'' of these economic actors. *See* 3/15/17 Tr. 1095 (Leonard); *see also* Amended Written Direct Statement of Gregory K. Leonard, Trial Ex. 695, ¶ 72 (Leonard AWDT) (direct license agreements that track statutory structure evidence ''revealed preference''). Finally, the Services assert that the 2012 Settlement rate structure as benchmark is relevant and helpful because, although it was adopted five years ago, it is nonetheless a relatively recent agreement, covering the current rate period. *See* Katz WDT ¶¶ 6, 71; 3/13/17 Tr. 608–09 (Katz); Leonard AWDT ¶ 45 *et seq.;* 3/15/17 Tr. 1082 (Leonard).

The Services' experts candidly acknowledge that the rate structure they advocate cannot be construed economically as the ''best'' approach to pricing in this market. *See, e.g.,* 4/7/17 Tr. 5574–76 (Marx). Rather, the Services' experts uniformly link the fact that the marginal physical cost of streaming is zero to the need for a flexible rate structure, such as now exists. *See, e.g.,* 3/20/17 Tr. 1829 (Marx); 3/13/17 Tr. 558 (Katz); 3/15/17 Tr. 122 (Leonard). Indeed, Copyright Owners' economic experts acknowledge this underlying fact. *See, e.g.,* 3/30/17 Tr. 4086 (Gans) (streamed music is ''non-rival good.''); 3/27/17 Tr. 3167 (Watt); 4/3/17 Tr. 4318 (Rysman); 4/13/17 Tr. 5917–18 (Hubbard).

Professor Katz noted that the existing revenue-based rate structure captures important specific aspects of the economics of the interactive streaming market, accounting for the variable willingness to pay (WTP) among listeners and the corollary variable demand for streaming services. *See* 3/13/17 Tr. 586–87 (Katz); *see also* Written Rebuttal Testimony of Leslie M. Marx, Trial Ex. 1069, ¶¶ 239 *et seq.* (Marx WRT); 4/7/17 Tr. 5568 (Marx) (present structure serves customer segments with variety of preferences and WTP).[47] Professor Rysman, an expert for Copyright Owners, hypothesized that under the current rate regime overall revenues might be increasing because of movements ''down the demand curve'' (*i.e.,* changes in quantity demanded in response to lower prices), rather than because of, or in addition to, an outward shift of the demand curve (*i.e.,* increase in demand at every price). 4/3/17 Tr. 4373–74 (Rysman). Professor Hubbard perceives a link between the existing rate structure and the ''growth in the number of consumers, number of streams, entry, the number of companies providing the streaming services, and the identity of the companies providing those services . . . .'' 4/13/17 Tr. 5978 (Hubbard); *see* Hubbard WDT ¶ 4.7 (settlement rate structure provides ''necessary flexibility to accommodate the underlying economics of [REDACTED]'s various digital music service offerings.''); [48] 3/15/17 Tr. 1176 (Leonard) (notwithstanding changes in streaming marketplace, economic structure of marketplace, which made percent-of-revenue appropriate, has not changed).

The Services' experts further assert that the multiple pricing structures necessary to satisfy the WTP and the differentiated quality preferences of downstream listeners relate directly to the upstream rate structure to be established in this proceeding. Professor Marx opines that the appropriate *upstream* rate structure is derived from the characteristics of downstream demand. 3/20/17 Tr. 1967 (Marx) (rate structure upstream should be derived from need to exploit WTP of users downstream via a percentage of revenue). This upstream to downstream consonance in rate structures represents an application of the concept of ''derived demand,'' whereby the demand upstream for inputs is dependent upon the demand for the

[45] This problem is irrelevant to Copyright Owners' proposal, because they propose the elimination of the All-In provision in the rate structure.

[46] *Except when it doesn't.* The Services seek the elimination of the ''Mechanical Floor,'' a significant departure from the existing structure.

[47] In more formal economic terms, Professor Katz noted that the present structure enhances variable pricing that allows streaming services ''to work [their] way down the demand curve,'' *i.e.,* to engage in price discrimination that expands the market, providing increased revenue to the Copyright Owners as well as the Services.'' 3/13/17 Tr. 701 (Katz).

[48] The Copyright Owners sought to rebut Professor Hubbard's argument by confronting him with the offerings of Tidal, a streaming service that does not compete by offering a low-cost service. Eisenach WDT ¶¶ 49–50. However, Tidal's offering of a higher priced subscription service that provides enhanced features such as hi-fidelity sound quality actually proves the point that Professor Hubbard and the other Service economists are making: There is a segmentation of demand across product characteristics and WTP that permits differential pricing in this industry.

final product downstream. *Id.; see* P. Krugman & R. Wells, *Microeconomics* at 511 (2d ed. 2009) (''[D]emand in a factor market is . . . *derived demand* . . . [t]hat is, demand for the factor is derived from the [downstream] firm's output choice'').

The Services' economists also contend that the existing rate structure has produced generally positive practical consequences in the marketplace. As the Services' joint accounting expert, Professor Mark Zmijewski testified, the decrease in publishing royalties from the sale of product under subpart A since 2014 has been offset by an increase in music publisher royalties (mechanical + performance royalties) over the same period. Expert Report of Mark E. Zmijewski, Trial Ex. 1070, ¶¶ 38, 40 (Zmijewski WRT); 4/12/17 Tr. 5783 (Zmijewski). Professor Hubbard dismisses as economically ''meaningless'' the argument that Copyright Owners have suffered *relativ*e economic injury under the current rate structure simply because the increase in their revenues from interactive streaming has been proportionately less than the growth in the number of interactive streams. 4/13/17 Tr. 5971–73 (Hubbard). There is no evidence in this record that, if the price of the services available to these low to zero WTP listeners had been increased, they would have paid the higher price. In fact, the only survey evidence in the record suggests that listeners to streaming services have a highly elastic demand, *i.e.,* they are highly sensitive to price increases.[49]

On the Licensee Services' side of the ledger, Professor Katz identifies the entry of new interactive streaming services and new investment in existing interactive streaming services during the present rate period as evidence that the present rate structure is ''working.'' 3/13/17 Tr. 667 (Katz). He notes the ubiquity of percent-of-revenue based royalty structures in the music industry, indicating (as a matter of revealed preference) the practicality of a revenue-based royalty system. *See* 3/13/17 Tr. 766–67 (Katz).[50]

Although the Services' economic experts extol the benefits of the current rate structure, they acknowledge the problem, whether hypothetical or real, that the Services have an incentive and a capacity to minimize the amount of revenue that is attributed to the revenue base. Further, even absent any wrongful intent with regard to the measurement of revenue, the Services recognize that attribution of revenue across product/service lines of various service offerings can be difficult and imprecise. *See, e.g.,* 4/5/17 Tr. 5000 (Katz). Additionally, the Services might focus on long-term profit maximization, thereby deferring shorter-term profits through temporarily lower downstream pricing in a manner that suppresses revenue over that shorter-term. The Services might also use music as a ''loss leader,'' displacing streaming revenue to encourage consumers to enter into the so-called economic ''ecosystem'' of the streaming services, especially the multi-product/service firms in this proceeding, such as Amazon, Apple, and Google. The operators of these multi-product environments might assume music consumers can be exposed to other goods and services available for purchase. Third, the Services might obscure royalty-based streaming revenue by offering product bundles that include music service offerings with other goods and services, rendering it difficult to allocate the bundle revenue between royalty-bearing service revenue and revenue attributable to other products in the bundle.

Professor Katz testified, however, that the existing rate structure accommodates these bundling, deferral, and displacement issues by the use of minima that are triggered if the royalty resulting from the headline percent-of-service revenue falls below the established minima. Katz WDT ¶¶ 82–83; 3/13/17 Tr. 670 (Katz). Moreover, he concluded that because the marketplace appears to be functioning, the alternative minimum rates must be adequately handling revenue measurement issues. *Id.* at 738; 4/5/17 Tr. 5055–57 (Katz). In similar fashion, Dr. Leonard opined that the 2012 Settlement rate structure created a number of ''buckets'' to deal with problems of this sort, although he acknowledged that there was no reason why adjustments could not be made to the ''buckets'' going forward. 3/15/17 Tr. 1227–28 (Leonard); *see also* 3/13/17 Tr. 670–71 (Katz) (did not analyze whether to adjust ''specific rates'' of the minima).

Copyright Owners criticize the 2012 rate structure because of the inherent problems with measurement of revenue. Specifically, Copyright Owners focus on deferral and displacement problems. *See* Rysman WDT ¶ 13. With regard to revenue deferral, Copyright Owners argue that the services' attempt to grow their customer base and future profits is fueled by a strategic decision to lower retail prices, thus sacrificing current revenue for future economic benefits. *Id.*; *see also* 3/21/17 Tr. 2081–83 ([REDACTED]).

The Services concede that there is a period in the life-cycle of a streaming service when ''user numbers'' may be more important to a service, its investors, and its market price; however there comes a time, in the ''late-stage private and public markets,'' when ''[REDACTED].'' Written Rebuttal Testimony of Barry McCarthy, Trial Ex. 1066, ¶¶ 37 (McCarthy WRT).[51] The Services argue, however, that Copyright Owners misunderstand the emphasis on long term growth. That emphasis, they argue, relates to the Services' willingness to sacrifice short-term profitability by incurring up-front costs, which has no bearing on current period revenues. 3/21/17 Tr. 2085 ([REDACTED]). The Services nonetheless acknowledge that they focus currently on the second derivative of revenue—the ''growth of the growth''—rather than revenue growth.

The Judges find that the record in this proceeding indicates that the Services do seek to engage to some extent in revenue deferral to promote a long-term growth strategy. A long-term strategy that emphasizes scale over current revenue can be rational, especially when a critical input is a quasi-public good. Growth in market share and revenues is not matched by a commensurate increase in the cost of inputs, whose marginal cost of production (*reproduction* in this context) is zero. It appears to the Judges that the nature of the downstream interactive streaming market and its reliance on scaling for success, results

[49] In a real-life example of this phenomenon, [REDACTED] explained [REDACTED]'s internal analysis of the marketplace impact of [REDACTED]'s decision to discount the monthly subscription price of its [REDACTED] service [REDACTED]. The analysis indicated that [REDACTED]% of the subscribers were new to the interactive streaming segment of the market, and [REDACTED]% came from existing subscribers to other services at the standard $9.99 monthly price. As [REDACTED] explained, music publishers would lose royalties on $[REDACTED] of revenue on the [REDACTED]% who migrated away from a $9.99 service, but would add royalties on the $[REDACTED] for each subscriber who was part of the [REDACTED]% cohort. *See* 3/16/17 Tr. 1576–1639 ([REDACTED]); *see also* 3/21/17 Tr. 2243–44 (Hubbard).

[50] There is a facially discordant aspect to the Services' argument. They are consistently incurring losses under this rate structure and the present rates, yet they are essentially content for the present rates and structure to be continued. The presence of chronic losses would facially suggest that the Services would be in need of rate reduction (as some of their experts suggest would be proper given their analyses). This conundrum is explained by the Services' engaging in competition for market share, as discussed *infra.*

[51] No witness offered any testimony that might indicate whether the currently operating Services perceive themselves to be at the beginning, middle, or ''late-stage'' of this cycle.

necessarily in a competition *for the market* rather than simply competition *in the market.* This competition emphasizes the importance of the dynamic creation of new markets and ''new demand curves,'' recognizing that short-term profit or revenue maximization might be inconsistent competing for the market long-term.

When the Services pay royalties as a percent of their *current* revenue, the input suppliers, *i.e.,* Copyright Owners, are likewise deferring some revenue to a later time period and assuming some risk as to the ultimate existence of that future revenue. One way the Copyright Owners could avoid this impact would be to refuse to accept a percent-of-revenue form of payment and move to a fixed per-unit price. Another way would be to establish a pricing structure that provides minima and floors, below which the revenue could not fall. The bargain struck between Copyright Owners and Services in 2012 is an example of the latter structure.

In this proceeding, the Services assert there is no evidentiary support for Copyright Owners' conclusory assertion that the Services intentionally displace revenue by engaging in ''cross-selling'' or revenue bundling. *See* SJPFF at 308. The Judges agree that there is no support for any sweeping inference that cross-selling has diminished the revenue base.

Regardless of the existence or extent of cross-selling, Copyright Owners argue that the Services manipulate revenue calculations in their favor, allegedly defining revenue in opportunistic ways. *See* Rysman WDT ¶ 44; Rysman WRT ¶ 15; see also Ghose WDT ¶¶ 78 (arguing on behalf of Apple that ''service revenue for . . . bundles is subjective and can be interpreted differently by different service providers''). Copyright Owners maintain that they cannot discern the alleged manipulation and opportunism as it occurs, because the booking of revenue among lines of business is ''opaque to publishers.'' Rysman WDT ¶ 43; Rysman WRT ¶ 15; Ghose WDT ¶¶ 80–81. In support of this assertion of revenue manipulation, Copyright Owners point to [REDACTED].

Before [REDACTED] engaged in [REDACTED], it engaged in a pricing analysis to determine its optimal price point for [REDACTED] and interactive streaming access. *See* [REDACTED] Pricing Study—Final Report, Trial Ex. 113 ([red] Study). [REDACTED] contends its pricing analysis demonstrated that [REDACTED]. Trial Ex. 111, ¶ 14 n.9 ([REDACTED] WRT). In conjunction with [REDACTED]. [REDACTED] lowered the [REDACTED] subscription price to $[REDACTED] per month, compared to the full $[REDACTED] per month price. Amazon determined that Prime members who were unwilling to pay the full [REDACTED]/month subscription price for [REDACTED] could be enticed to pay $[REDACTED] per month less, subscribing to [REDACTED] service at $[REDACTED]/month. *Id.* ¶ 22.

[REDACTED] maintains these [REDACTED] created ''unique distribution channels'' generating new listeners and thus new royalties for the licensors without cannibalizing higher royalties at the full $[REDACTED] per month subscription price. Id. ¶¶ 25, 21–22.[52] [REDACTED] asserts that the net benefits of its pricing strategies are confirmed by a consumer survey undertaken by [REDACTED] Mr. Robert L. Klein, Chairman and co-founder of Applied Marketing Science, Inc. (''AMS''), a market research and consulting firm. In that survey (Klein Survey), Mr. Klein identified [REDACTED]. At a high level, the Klein Survey results indicated that [REDACTED]'s music listeners had an overall high elasticity of demand for streamed music, meaning that their subscription demand was highly sensitive to changes in subscription prices. Written Rebuttal Testimony of Robert L. Klein, Trial Ex. 249, ¶ 67 (Klein WRT).[53]

Copyright Owners attack the Klein Survey on several fronts. The arguments made by Copyright Owners are insufficient, however, to seriously weaken the probative value of the Klein Survey. In the end, the Judges are not persuaded by the Copyright Owners' revenue bundling arguments not to adopt a flexible, revenue-based royalty rate.

3. All-In Rate vs. Independent Mechanical Rate

The current mechanical royalty rate is calculated as a so-called ''All-In'' rate. When calculating the mechanical rate the parties subtract from the base rate the amount paid by the interactive streaming services to performing rights organizations (PROS) for the musical works performance right. All five Services urge the Judges to establish a statutory rate structure for the forthcoming rate period that contains this ''All-In'' feature; whereas Copyright Owners request that the rate for the forthcoming rate period be set without regard to the amounts the Services pay PROs for the performance rights.

According to the Services, a key aspect of the 2008 and 2012 settlements was the deduction of expenses for public performance royalties; in other words, the top-line rate the Services paid under the section 115 license would be added to the performance rights royalties for an All-In musical works fee from the Services' point of view. Levine WDT ¶ 35; Written Direct Testimony of Adam Parness, Trial Ex. 875, ¶ 7 (Parness WDT); 3/8/17 Tr. 298–99 (Parness). According to Apple, the absence of any value in the mechanical license separate from the performance license is underscored by the fact that interactive streaming is the only distribution channel that pays both a performance royalty and a mechanical royalty. Noninteractive services, SDARS, and terrestrial radio pay a performance royalty but not a mechanical royalty, whereas record companies pay a mechanical royalty under subpart A but not a performance royalty. Rebuttal Testimony of David Dorn, Trial Ex. 1612, ¶ 10 (Dorn WRT).

According to the Services this All-In rate structure is consistent with the parties' expectations in settling *Phonorecords I* and *II. See* SJPFF ¶ 112. Additionally, the Services note that many direct licenses between musical works copyright owners and streaming services incorporate the ''All-In'' feature of the existing section 115 license. *See* SJPFF ¶¶ 143–145 (and record citations therein).

Separately, Apple concurs in the proposal of an ''All-In'' rate in the forthcoming rate period. According to Apple, the Judges

> should adopt an All-In rate for interactive streaming because (1) mechanical and performance royalties are complementary rights that must be considered together in order to prevent exorbitant costs, (2) the current statute use an All-In rate, (3) All-In rates provide greater predictability for businesses, and (4) recent fragmentation and uncertainty with respect to performance licenses threaten to exacerbate the problems of high costs and uncertainty already present in the industry.

Apple PFF ¶¶ 138, *et seq.* (and record citations therein). Apple maintains that, as a policy matter, an All-In rate helps maintain royalties at an economically

[52] More precisely, although *some* [REDACTED] listeners might have paid the full subscription price, the [REDACTED] pricing analysis indicated that any revenue losses arising from discounts obtained by these sub-groups were dwarfed in term of revenue gains from the new subscribers at the lower discounted rates [REDACTED]. [REDACTED] WRT ¶ 22.

[53] It is important to note that Copyright Owners' attacks on the Klein Survey are not levelled by any witnesses, nor contradicted by their own survey expert, because Copyright Owners elected not to proffer such an expert in their direct (or rebuttal) cases. Rather, Copyright Owners elected to make a descriptive argument regarding the elasticity of demand among different segments of the market, as opposed to a survey-based or econometric study of price elasticity.

efficient level because it sets a single value for all of the rights that interactive streaming services must obtain from publishers and songwriters. *See* Rebuttal Report of Professor Jui Ramaprasad, Trial Ex. 1616, ¶ 13 (Ramaprasad WRT) (separate mechanical royalty could lead to ''unreasonably high combined royalties for publishers and songwriters''); 3/23/17 Tr. 2667–69, 2670 (Ramaprasad); *see also* Leonard AWDT ¶ 56; Katz WDT ¶ 94; Written Direct Testimony of Michael Herring, Trial Ex. 880, ¶ 59 (Herring WDT). Accordingly, Apple asserts that adoption of an All-In rate will ensure that these two complementary rights are considered in tandem, with the cost of one offset against the cost of the other. *See* Dorn WRT ¶ 15; *see also* 3/13/17 Tr. 587–588 (Katz); 3/15/17 Tr. 1191–92 (Leonard); Herring WDT ¶ 59.

Apple, consistent with the other Services, argues that the All-In rate structure is particularly important because of recent ''fragmentation'' [54] and uncertainty in performance rights licensing. The Services all claim this potential fragmentation threatens to exacerbate existing uncertainty over royalty costs. *See* Dorn WRT ¶¶ 17–18; Ramaprasad WRT ¶¶ 13, 63; Parness WDT ¶¶ 16–20; Katz WDT ¶¶ 87–94; 3/13/17 Tr. 602–04 (Katz). Apple notes that this problem may be amplified because of the emergence of a fourth PRO, Global Music Rights (GMR) in addition to SESAC which, like GMR, is not subject to musical works performance license proceedings in the Rate Court.[55] Parness WDT ¶ 18; Katz WDT ¶ 91; *see* 3/9/17 Tr. 382–83 (Parness); 3/13/17 Tr. (Katz) 602–04.[56] The Services also raise the specter of future ''withdrawals'' by music publishers from one or more PROs.

[54] In this context, ''fragmentation'' refers to the existence of more than one owner of copyrights to a single musical work.

[55] Since 1941, ASCAP and BMI have been subject to Consent Decrees they reached with the Department of Justice in a DOJ antitrust suit. *See, e.g., United States* v. *Broadcast Music, Inc.,* 1940–43 Trade Cas. ¶ 56,096 (W.D.Wis. 1941).

[56] Apple also claims that there is recent legal uncertainty because of the 2016 decision regarding fractional licensing in *United States* v. *Broadcast Music Inc.,* 64 Civ. 3787 (LLS), 2016 WL 4989938 (S.D.N.Y. Sept. 16, 2016), which Apple claims has created even more market power for the owners of musical works. Apple hypothesizes fractional licensing ''almost certainly will lead to higher total payments for performance rights, higher transactions costs, and greater uncertainty.'' Parness WDT ¶ 20. In the *BMI* case, according to Apple, the Rate Court confirmed that PROs can grant licenses for fractional interests in musical works, meaning that in order to offer a work, interactive streaming services must obtain licenses from every entity with any *de minimis* interest in the work. *Id.*

Copyright Owners' initial response to the All-In structure is a jurisdictional argument. They emphasize that this is a proceeding to set rates and terms for the section 115 compulsory mechanical license to make and distribute phonorecords, not to perform works. 17 U.S.C. 115, 801(b)(1). More particularly, Copyright Owners note that, the section 115 compulsory license explicitly applies solely to the exclusive rights bestowed by clauses (1) and (3) of section 106; that is the rights to make and to distribute phonorecords of [nondramatic musical] works.'' This proceeding does relate to the exclusive right provided by clause (4) to perform the work publicly. 17 U.S.C. 106, 115. Thus, Copyright Owners argue, the public performance right provided by 17 U.S.C. 106(4) is an entirely separate and divisible right from the mechanical right at issue in this proceeding and is not subject to the section 115 license. *See* COPCOL ¶ 314 (citing 17 U.S.C. 106, 115, 201(d) and 2 *Nimmer on Copyright* sec. 8.04[B] (''[T]he compulsory license does not convey the right to publicly perform the nondramatic musical work contained in the phonorecords made under that license. Similarly, a grant of performing rights does not, in itself, confer the right to make phonorecords of the work.'')).

Copyright Owners note that performance royalties are negotiated between licensors and licensees, subject to challenge in a Rate Court proceeding. They conclude that the Judges cannot set an ''All-In'' rate because they have ''not been vested with the authority to set rates for performance rights because they are not covered by section 115.'' Copyright Owners' Proposed Conclusions of Law ¶ 315 (COPCL). Copyright Owners further note that the Services have not provided evidence in this proceeding to justify an ''All-In'' rate, such as evidence showing the rates and terms in existing performance licenses; the duration of such licenses; benchmarks for performance rights licenses; and the impact of interactive streaming on other sources of performance income, including non-interactive streaming, terrestrial radio, and satellite radio income. Further, Copyright Owners point out that the PROs and all music publishers would be necessary parties for any such determination. *See id.* ¶ 319.

For these reasons, Copyright Owners decry as mere ''sophistry'' the Services' argument that they are not asking the Judges to set performance rates, but rather only to ''set'' a ''mechanical'' rate that permits them to deduct what they pay as a performance royalty. More particularly, they argue that this approach, if adopted, would leave the mechanical rate indeterminate, subject to negotiations or judicial action regarding the performance license rate. *See id.* ¶ 320. Indeed, Copyright Owners note, under the Services' ''All-In'' proposal, the mechanical rate could be zero (if performance royalties are agreed to or set by the Rate Court at a rate that is greater than or equal to the ''All-In'' rate proposed by the Services here). Copyright Owners argue that a mechanical royalty rate of zero ''is anything but reasonable. . . .'' *Id.* ¶ 322.

In an evidentiary attack, Copyright Owners demonstrate that the only percipient witness who engaged directly in the 2008 negotiations involving the ''All-In'' rate was the NMPA president, David Israelite. By contrast, the Services' two witnesses, Mr. Parness and Ms. Levine, did not participate directly in those negotiations. *See* Copyright Owners' Reply Proposed Findings of Fact ¶ 125 (CORFF). Thus, Copyright Owners assert that the Services cannot credibly argue based on what the negotiating parties actually intended with regard to, *inter alia,* the ''All-In'' rate.[57]

Copyright Owners also take aim at the Services' argument that it matters not whether they pay royalties designated as ''performance'' or ''mechanical,'' because the same rights owners are also receiving performance royalties. According to Copyright Owners, this argument (1) ignores the Copyright Act's separate and distinct mechanical and performance rights; (2) ignores that the rates for the use of those two rights, to the extent not agreed, are set in different jurisdictions; and (3) ignores the disruption that would be caused by eliminating mechanical royalties, *e.g.,* disruptions arising from (a) the fact that mechanical royalties are the most significant source of recoupment of advances to songwriters; and (b) songwriters receive a greater share of mechanical royalties than they do of performance royalties (both because of the standard splits in songwriter agreements and the fact that performance income, unlike mechanical income, is diminished by PRO commissions). COPCL ¶ 323; COPFF ¶ 640.

[57] Copyright Owners take this argument one step further—maintaining that consequently the Services ''have presented no competent evidence that an ''All-In'' rate structure ''is consistent with the parties' expectations in settling *Phonorecords I* and *II.*'' CORSJPCL ¶ 112. It is difficult to conclude that this fundamental rate structure, agreed to in two separate settlements between the parties, was not consonant with their ''expectations.''

Copyright Owners also assert that ''a single All-In payment will . . . diminish payments to songwriters, and will negatively impact the publishers' ability to recoup advances, which will, in turn, negatively impact the size and number of future advances.'' Witness Statement of Thomas Kelly, Trial Ex. 3017, ¶ 66 (Kelly WDT); Witness Statement of Michael Sammis, Trial Ex. 3019, ¶ 27 (Sammis WDT); Witness Statement of Annette Yocum, Trial Ex. 3021, ¶ 23 (Yocum WDT); Israelite WDT ¶ 71.

Copyright Owners counter the Services' claim that increasing ''fractionalization'' of licenses justifies an ''All-In'' rate as a red herring. Specifically, they argue there has *always* been fractional licensing of performance rights by the PROs; there typically are multiple songwriters and publishers with ownership rights in a song and they might not all be affiliated with the same PRO. The recent litigation only confirmed that there is no legal basis on which any one PRO has the right to license rights it does not have. Rebuttal Witness Statement of David M. Israelite, Trial Ex. 3030, ¶¶ 65–66 (Israelite WRT); 3/29/17 Tr. 3662–63 (Israelite); 3/9/17 Tr. 372–373 (Parness).

Moreover, contrary to the Services' assertions, they presented no evidence that the presence of GMR, a new PRO, has altered the extent of fragmentation in any manner, let alone increased the degree of fragmentation in the marketplace. Copyright Owners point out that the Services admitted that GMR represents fewer than 100 songwriters and has a meager market share of roughly 3 percent of the performance market. 3/9/17 Tr. 365–67 (Parness); *see* Israelite WRT ¶ 59. Copyright Owners also note that the Services presented no evidence either that there has been an increase in performance rates in licenses issued by GMR, or, more generally, of any actual or potential impact of this alleged ''fragmentation'' of the performance rights marketplace on their interactive streaming businesses. 3/9/17 Tr. 381 (Parness)).

Finally, Copyright Owners note that, if it ever were a justification for an All-In rate, the issue of publisher withdrawals from PROs has been overtaken by events. Specifically, they note that the ASCAP and BMI Rate Courts in the Southern District of New York, the Second Circuit, and the Department of Justice have determined that partial withdrawals by publishers are not permitted. Israelite WRT ¶¶ 62–63, *citing In re Pandora Media,* 785 F.3d 73, 77–78 (2d Cir. 2015), *aff'g* 6 F. Supp. 3d 317 (S.D.N.Y. 2014).[58]

4. Mechanical Floor

Copyright Owners urge the Judges to retain the feature of the extant rate regulations establishing a Mechanical Floor; that is, a rate below which the calculated mechanical license rate could not fall.[59] They emphasize that the revenue displacement and deferral problems they perceive under a percent-of-revenue rate structure are alleviated with a Mechanical Floor because that rate is based on a per-subscriber calculation. COPFF ¶¶ 639–40. Copyright Owners maintain that the Services' desire to eliminate the Mechanical Floor is nothing other than a ''thinly veiled effort to sharply reduce the already unfairly low mechanical royalties.'' COPFF ¶ 644. The import of the Mechanical Floor is underscored by Dr. Eisenach who testifies that, in 2015, the Services triggered the Mechanical Floor in over 43% of service-months (66 of 152 such months). Written Rebuttal Testimony of Jeffrey A. Eisenach, Trial Ex. 3033, ¶ 115 (Eisenach WRT).

Copyright Owners further argue that the Mechanical Floor is necessary to preserve a source of publishers' advances to songwriters and recoupments of prior advances. COPFF ¶ 640 (and record citations therein). They assert that songwriters benefit more from publishing agreements than from performance agreements with PROs because, under current publishing agreements, songwriters typically receive 75% or more of mechanical royalty income; whereas, PRO's split performance royalty income 50/50 between publishers and songwriters. *Id.* Moreover, PROs charge songwriters an administrative fee, further reducing the value of the performance royalty income relative to mechanical royalty income. *Id.*

Despite their proffer of the 2012 rates as an appropriate benchmark, the Services[60] propose elimination of the Mechanical Floor in the forthcoming rate period. In support of this position, the Services assert that they acquiesced to the Copyright Owners' insistence on the Mechanical Floor in the 2012 Settlement, because they believed the Mechanical Floor was ''illusory,'' *i.e.,* that it was ''highly unlikely to ever be triggered. . . .'' SJPFF ¶¶ 127, 160 (and record citations therein).[61] According to the Services, experience has shown that the Mechanical Floor in the current rate structure has added uncertainty and has led to Services paying ''windfall'' royalties to Copyright Owners well above the stated ''All-In'' amount. *See* Apple PFF ¶¶ 85, 165; *see also* Google PCOL ¶ 22 (triggering of Mechanical Floor caused in some circumstances by Copyright Owners leveraging market power).

The Services argue that the Mechanical Floor is tantamount to a separate rate and defeats the benefits of an All-In rate. Apple PFF ¶¶ 164–167 (and record citations therein). They acknowledge the mechanical rights and public performance rights are ''perfect complements'' from the perspective of an interactive streaming service, but assert there is no economic rationale for setting the two rates separately from one another. *Id.* ¶ 88. The Services fear the alternative minimum Mechanical Floor could supersede a ''reasonable headline royalty rate.'' Marx WDT ¶ 165; *see* Leonard AWDT ¶¶ 54, 80–81 (''perfect complements'' argue for elimination of Mechanical Floor). The Services also argue that removal or adjustment of the Mechanical Floor would improve economic efficiency. Marx WDT ¶¶ 135, 165.

5. Greater-Of per Unit/per User Structure

Copyright Owners' proposal constitutes a ''greater of'' rate structure, whereby the royalty would equal the greater of $.0015 per play and $1.06 per-end user per month. In support of this approach, Copyright Owners contend it establishes a value for each copy of a musical work, independent of the Services' business models and pricing strategies. Rysman WDT ¶ 89. They argue that the greater-of structure is no more complicated than a per-play rate alone and is much less complicated

[58] *See also* Determination of Royalty Rates and Terms for Making and Distributing Phonorecords (Phonorecords III); subpart A Configurations of the Mechanical License, Docket No. 16–CRB–0003–PR, 82 FR 15297, 15298 n. 15 (March 28, 2017). (''[M]usic licensing is fragmented, both by reason of the Consent Decree and the fragmentation of the statutory licensing schemes in the Act. These issues are beyond the scope of authority of the Judges; they can only be addressed by Congress.'').

[59] If the All-In Rate calculation results in a dollar royalty payment below the stated Mechanical Floor rate, then that floor rate would bind.

[60] Although Apple does not join in the endorsement of the 2012 rates as benchmark, Apple does propose elimination of the Mechanical Floor for the upcoming rate period. Apple Inc. Proposed Rates and Terms, at 4, 7–8 (royalties calculated by multiplying number of streams times per-stream rate, subtracting public performance royalties, and allocating per work) (May 11, 2017). Google's revised rate proposal, which also does not rely on the 2012 rate as a benchmark, does not include a Mechanical Floor. *See,* Google Amended Proposal, at 1.

[61] This claimed ''illusion'' became a reality, as the [REDACTED], has been paying the vast majority of its royalties pursuant to the Mechanical Floor, as has [REDACTED]. *See, e.g.,* Marx WDT ¶ 76; Marx WRT ¶ 40.

than the 2012 Settlement rate structure. According to Copyright Owners, a per-user rate adds only one additional metric for royalty calculation. Brodsky WDT ¶ 76. Copyright Owners also assert that their usage-based structure is aligned with the value of the licensed copies because couples rates with usage and consumption. CORFF at 22. Finally, Copyright Owners note that in music licensing agreements it is not uncommon to find royalty rates set in a greater-of formula that includes a per-user and a per-play prong, as well a percent-of-revenue prong. *See* CORFF at 97 (and record citations therein).

The Services assert that the greater-of aspect of Copyright Owners' rate proposal would lead to absurd and inequitable results, well above the rates established under Copyright Owners' per-play rate prong. Professor Ghose, one of Apple's economic expert witnesses, calculated that under Copyright Owners' greater-of structure, interactive streaming services would pay under the per-user prong if the number of monthly streams per user averaged less than 707. 4/12/17 Tr. 5686–87 (Ghose). In other words, the hypothetical service would be required to pay $1.06 per user rather than $0.0015 per stream.[62] *Id.* at 5687.

Importantly, Apple argues that the record in this proceeding shows that Services' monthly streams have been historically less than 707 per user per month. Specifically, relying on data in Dr. Leonard's Written Rebuttal Testimony, Apple contends that the annual weighted average number of streams per user per month across current subpart B and subpart C service offerings has been below [REDACTED] in each year from 2012 to 2016, while the average number of streams per user per month has exceeded 707 (which would trigger the per play prong) only [REDACTED] according to service-by-service data. *Id.*;[63] *see* Written Rebuttal Testimony of Gregory K. Leonard, Trial Ex. 698, at Ex. 3b (Leonard WRT). Apple argues that these historical data indicate that the Services would consistently pay more than the $0.0015 per play rate emphasized by Copyright Owners in this proceeding. *See* Apple PFF 284.[64]

According to Apple, even Copyright Owners' own expert, using different data, found that if the Copyright Owners' proposal had been in effect, [REDACTED] of the [REDACTED] Services he reviewed would have been required to pay under the per-user prong in December 2015. Rysman WRT ¶ 87, Table 1. Professor Rysman's data for December 2014 indicated that [REDACTED] of the [REDACTED] Services would have been required to pay under the per-user prong. *Id.* at Table 2.

Copyright Owners do not dispute the statistical analyses; rather, they claim that the binding nature of the per-user prong is not problematic. They cite sound recording performance license agreements in which a per-user of prong binds interactive streaming services at a rate of $[REDACTED], well above the $1.06 proposed by Copyright Owners for mechanical licenses. *See* CORPFF (Apple) at 104. Copyright Owners also attempt to support the higher effective per play rates by explaining that per-user rates reflect the value of *access* to the publishers' repertoires, not just the value of an individual stream. *See* CORPFF (Apple) at 104–05 (and citations therein).

*C. 2012 Settlement as Rate Structure Benchmark*

The Services request a rate structure that (although not uniform in the respective particulars) generally tracks the present rate structure (including the All-In rate approach, but excluding the present Mechanical Floor). More particularly, they propose a structure based on a ''headline'' percent-of-revenue royalty, but, subject to certain minima that are triggered if the revenue-based royalty is either too low or inapplicable.

By contrast, Copyright Owners seek a radical departure from the present rate structure. First, Copyright Owners seek to eliminate the All-In rate, thus decoupling the mechanical rate from the performance rate. Second, they advocate for a replacement of the ''percent-of-revenue with minima'' structure and a substitution of a rate equal to the greater of a per-play royalty and a per-user royalty. *Copyright Owners' Amended Proposed Rates and Terms* at 8.

Copyright Owners criticize using the 2012 rate structure as a benchmark for rates in the present market. Copyright Owners contend that results of a negotiated settlement have limited evidentiary value in the present context. They also argue that the parties arrived at the 2012 rate structure and rates in a market that was not mature and that, thus, the settlement rates were merely ''experimental.'' The Copyright Owners further contend that any benchmark based upon a compulsory, statutory rate is suspect because of the ''shadow'' of the statutory construct.

1. Evidentiary Value of Settlement Rates

Copyright Owners criticize the relevance of the 2012 settlement-based rate structure. First, they note that, as terms in a settlement, the elements of the rate structure do not reflect the structure the market would set, but rather reflect the parties' own understanding of how the Judges would rule in the absence of a settlement.

Second, Copyright Owners assert that, assuming *arguendo* that the current rate structure can be used for benchmarking purposes, the Services have not presented competent evidence or testimony as to the intentions of the settling parties who had negotiated the 2012 settlement, or, for that matter, the 2008 settlement that preceded it. Specifically, Copyright Owners claim that the witnesses who were called by the Services to testify did not negotiate directly with the Copyright Owners. 3/29/17 Tr. 3621–22 (Israelite).[65] More particularly, the two Services' witnesses who provided testimony concerning the negotiations, Adam Parness and Zahavah Levine, acknowledged they had no *direct* involvement in the *Phonorecords I* negotiations, and Ms. Levine did not engage in direct negotiations with regard to the *Phonorecords II* settlement either. 3/9/17 Tr. 339–40 (Parness); 3/29/17 Tr. 3885–86 (Israelite); Israelite WRT ¶ 14 (indicating that Ms. Levine had left Real Networks in 2006, before her former

[62] Professor Ghose used a hypothetical scenario in which a service had one user who listened to 300 streams in a given month. Under Copyright Owners' $0.0015 *per play* prong, the service would pay $ 0.0015 × 300, or $.45 in royalties. Under Copyright Owners' *per user* prong, the service would pay a royalty of $1.06 for the one user, which is an *effective* per play rate of $0.0035 per play ($1.06 ÷ 300) or more than twice the $0.0015 per-play rate. 4/12/17 Tr. 5687 (Ghose).

[63] Deezer averaged [REDACTED] streams in 2014 and Tidal averaged [REDACTED] streams in 2016. *Id.*

[64] This analysis underscores the inconsistency between Copyright Owners' claim that each stream of a musical work has ''inherent value.'' *See, e.g.,* Israelite WDT ¶ 39 (it ''makes no sense'' if ''[e]ach service effectively pays to the publisher and songwriter a different per-play royalty''). But in reality, Copyright owners understand that each musical work also contributes to a different value—access value (what economists call ''option value'')—when the musical works are collectivized and offered through an interactive streaming service, resulting in different effective per play rates paid by services if the per user prong is triggered. To explain this inconsistency, Copyright owners note the existence of a second ''inherent value''—not created by the songwriter in his or her composition—but rather created *by the user*—who inherently values access to a full repertoire. But these two purportedly ''inherent'' values are inconsistent (which is why there are two prongs in the proposal) and, given the heterogeneity of listeners, the ''access value'' is not ''homogeneous throughout the market. These points illustrate but some of the reasons why a single per play rate is inappropriate.

[65] *See supra* note 57 and accompanying text.

subordinate was negotiating the 2008 settlement).

Mr. Parness testified, at the time of the *Phonorecords I* settlement, he was Director of Musical Licensing for RealNetworks, Inc., an interactive streaming service and a member of DiMA, its bargaining representative. In that capacity, Mr. Parness was ''actively involved'' on behalf of Real Networks. Parness WDT ¶ 5. Substantively, Mr. Parness testified to his understanding that the important aspects of the *Phonorecords I* negotiations and settlement were: (1) An agreement that noninteractive services did not need a mechanical license; (2) the interactive mechanical license would be calculated on an ''All-In'' basis; (3) the rate would be structured as a percent-of-revenue with certain minima; and the headline rate would be 10.5%. Parness WDT ¶ 7. He noted that the rate minima were included at the behest of Copyright Owners, who were concerned that low retail pricing by the services would cause a revenue-based rate to result in too little royalty revenue. *Id.* ¶ 8. Mr. Parness further testified, with regard to the 2012 negotiations, that he directly negotiated with Mr. Israelite and the general counsel for the NMPA–negotiations that led to the parties' agreement essentially to maintain the subpart B structure and to create what became the new subpart C rate structure. *Id.* at 11; *see also* 3/9/17 Tr. 325–27 (Parness).

Ms. Levine, who was employed by Google YouTube at the relevant time, testified that in the *Phonorecords II* negotiations, Copyright Owners sought an increase in the subpart B rates, the services refused, and Copyright Owners ultimately withdrew that demand. Written Rebuttal Statement of Zahavah Levine, Trial Ex. 697, ¶ 2 (Levine WRT). Ms. Levine was not directly involved in the negotiations, however, as DiMA represented the interests of the services in those negotiations. Knowing the outcome of the negotiations does not illuminate the thought processes (or the horse-trading) that actually drove the negotiations or shaped the settlement structure.

The Copyright Owners proffered no specific testimony as to how or why the provisions of the 2008 and 2012 settlements were negotiated and valued, either in their constituent parts or as they were integrated into the rate structure ultimately adopted.

2. The 2012 Rates Were ''Experimental''

Copyright Owners maintain that the current rate structure was ''experimental,'' *i.e.,* when it was first agreed to there was no data to evaluate the business and Copyright Owners lacked knowledge as to the future development of the interactive market. Thus, they claim to have accepted the present rate structure because it offered protection against poorly monetized services, through the establishment of the alternate prongs. In fact, it was *Copyright Owners* that first proposed the three tiered rate structure that now exists, but the specific percentages and rates were the subject of negotiation. Copyright Owners' understanding of the characterization of the 2012 rates is informative; Mr. Israelite, who engaged in the negotiations, did not view the minima in the structure *as* minima, but rather as alternative rate prongs by which Copyright Owners would be paid the greatest of the rates calculated. 3/29/17 Tr. 3637 (Israelite). Copyright Owners acknowledge that they had no idea which prong would bind—because they had no control over the services business models or over the performance rates that are deductions to the All-In rate—so they negotiated all three alternatives to reflect that uncertainty. *Id.* at 3636–38.

With regard to the Mechanical Floor, Copyright Owners assert that they required this provision in part to protect against a severe or complete reduction in mechanical royalties that would as possible by virtue of the All-In structure. *See* Israelite WRT ¶¶ 19–22, 29, 81; 3/29/17 Tr. 3632, 3634–36, 3638, 3754, 3764–65 (Israelite); 3/8/17 Tr. 259 (Levine).[66]

The Services assert that there is no record evidence, beyond Mr. Israelite's testimony, that the existing rate structure was, or remains, experimental. They further note that by 2012, when this rate structure was renewed, consumer adoption of streaming was obvious, contrary to Copyright Owners' allegations. Levine WRT ¶ 5. The Services also assert that numerous services, including those backed by large companies, such as Yahoo and Microsoft, had already entered the market, and some of those services had achieved significant subscriber numbers. 3/8/17 Tr. 155–57 (Levine); *see also* Parness WDT ¶ 12.

The Services also dispute the assertion that there was no significant market development by the time of *Phonorecords II.* Levine WRT ¶¶ 5–6; 3/8/17 Tr. 171–72, 270–72 (Levine). Numerous services, including the more recent large new entrants, had already entered the market, with some realizing significant subscriber numbers. *Id.* at 155–57 (Levine).

[66] The Mechanical Floor is discussed in greater detail, *supra,* section IV.B.4.

3. The ''Shadow'' of the Statutory License

Copyright Owners assert that any benchmark, including the Services' proffered benchmarks, based on rates set for a compulsory license, is inherently suspect, because they are distorted by the so-called ''shadow'' of the statutory license. This is a recurring criticism. *See, e.g., Web IV,* 81 FR at 26329–31.

More particularly, Copyright Owners argue: ''The royalty rate contained in virtually any agreement made by a music publisher or songwriter with a license for rights subject to the compulsory license will be depressed by the availability of the compulsory license.'' COPFF ¶ 708 (and record citations therein). In summary, this alleged shadow diminishes the value of a benchmark rate that was formed by private actors who negotiated the rate while understanding that either party could refuse to consummate a contract and instead participate in a proceeding before the Judges to establish a rate. Thus, neither side can utilize any bargaining power to threaten to actually ''walk away'' from negotiations and refuse to enter into a license. In that sense, therefore, any bargain they struck would be subject to the so-called ''shadow'' of the regulatory proceeding.

The metaphorical shadow actually can be cast in two ways. First, when the parties are negotiating, they are aware of the rates established in *prior* proceedings, which shape their expectations of the likely outcome if they do not enter into a negotiated agreement. Second, there is the alleged shadow of the *upcoming* proceeding, should the parties fail to negotiate an agreement. That *in futuro* shadow reflects not merely the prior rulings of this tribunal (and its predecessors), but also any predictions the parties may make regarding, for example, the Judges' likely positions with regard to the present and changing nature of the industries involved, the economic issues, the weight of various types of evidence, the credibility of witnesses and the Judges' application of the 801(b)(1) standards.

The argument that the shadow taints the use of statutory rates, and direct agreements otherwise subject to the statutory license must be considered in light of section 115 of the Copyright Act, which provides that in addition to the objectives set forth in section 801(b)(1), in establishing such rates and terms, the Copyright Royalty Judges may consider rates and terms under voluntary license agreements described in subparagraphs (B) and (C). 17 U.S.C. 115(c)(3)(D). Subparagraphs (B) and (C), respectively, refer to agreements on ''the terms and rates of royalty payments under this section'' by ''persons entitled to obtain a compulsory license under [17 U.S.C. 115(a)(1)]'' and ''licenses'' covering ''digital phonorecord deliveries.'' *Id.* Thus, it is beyond dispute that Congress has authorized the Judges, in their discretion, to consider such agreements as evidence, notwithstanding the argument that the compulsory license may cast a shadow over those agreements.

Additionally, the Judges may consider the existing statutory rates themselves as evidence of the appropriate rate for the forthcoming rate period. Indeed, the Judges may consider existing rates as *dispositive evidence* when setting new rates. *Music Choice, supra,* 774 F.3d at 1012 (the Judges may ''use[ ] the prevailing rate as the starting point of their Section 801(b) analysis'' and may ultimately find that ''the prevailing rate was reasonable given the Section 801(b) factors.''). Of course, the fact that the Copyright Act and the D.C. Circuit grant the Judges statutory authority to consider statutory rates and related agreements as evidence does not instruct the Judges as to *how much weight* to afford such agreements. The exercise of that judicial discretion remains with the Judges.

Further, there is no reason to find such benchmark agreements *per se* inferior to other marketplace benchmark agreements that may be unaffected by the shadow, because the latter may be subject to their own imperfections and incompatibilities with the target market. Thus, the Judges must not only consider (i) the importance, *vel non,* of any ''shadow-based'' differences between the regulated benchmark market and an unregulated market; but also (ii) how those differences (if any) compare to the differences (if any) between the unregulated market and the target market (*e.g.,* differences based on complementary oligopoly power, bargaining constraints and product differentiation).[67]

In the present proceeding, the parties weigh in on the shadow issue with several additional arguments. Copyright Owners emphasize that the purpose of their benchmarking approach is to avoid the distortions of the shadow, by utilizing the unregulated sound recording agreements between labels and interactive streaming services and then applying a ratio of sound recording to musical works royalties, also in unregulated contexts, to develop a benchmark wholly free of the shadow cast by the statute. *See* Eisenach WDT ¶¶ 34–40. The Judges agree that a strength of the Copyright Owners' benchmarking approach is that it allows for the identification of marketplace benchmarks, so that the Judges can ascertain whether there are analogous markets from which statutory rates can be derived.

The Services' experts discount the shadow argument and, indeed, essentially rely on the statutory rates in subpart B and in subpart A as their benchmarks. Professor Marx opines that the statutory rates are superior in at least one way, because they incorporate the elements the Judges must consider—both the market forces and the section 801(b)(1) factors that are the bases for the statutory rates. 3/20/17 Tr. 1843–44, 1914 (Marx); *see also* 3/13/17 Tr. 575 (Katz) (the shadow leads the parties to meet the 801(b)(1) objectives).

However, when the rates are the product of settlements rather than a Determination by the Judges, they do not reflect the Judges' application of the elements of section 801(b)(1). Rather, the settlement rates reflect (implicitly) the parties' *predictions* of how the Judges may apply such factors. Although the Judges reasonably can, and do, accept the parties' understanding of how market forces shape their negotiations (indeed, economic actors' agreements are part and parcel *of* the market),[68] the Judges cannot defer to any implicit ''mindreading'' by the parties as to the Judges' application of the elements of section 801(b)(1). Rather, the Judges have a duty to independently apply the statute. Accordingly, the Judges reject the idea that rates and terms reached through a settlement can be understood to supersede—or can be *assumed* to embody—the Judges' application of the statutory elements set forth in section 801(b)(1). However, if on further analysis, the Judges find that provisions arising from a settlement reflect the statutory principles set forth in section 801(b)(1), then the Judges may adopt the provisions of that settlement if it is superior to the evidence submitted in support of alternative rates and terms.

With regard to the alleged impact of the shadow, Professor Katz offers a perspective. He opines that the so-called shadow imbues licensees with countervailing power, to offset or mitigate the bargaining power of licensors who otherwise have the ability to threaten to ''walk away'' from negotiations and thus decimate the licensees' businesses. 3/13/17 Tr. 661 (Katz). The Judges find merit in this perspective, because it underscores the fact that a purpose of the compulsory license is to prevent the licensor from utilizing or monetizing the ability to ''walk away'' as a cudgel to obtain a better bargain. In this limited sense, the agreements created under the so-called shadow thus are beneficial, to the extent that they provide one potential way in which to offset the complementary oligopoly power of the record companies, especially the Majors. Indeed, this countervailing power argument is consistent with the Judges' ''shadow'' analysis in *Web IV,* 81 FR, at 26330–31 (noting the counterbalancing effect of the statutory license in establishing effectively competitive rates).[69]

Professor Leonard presents yet another perspective on the statutory benchmarks, arguing that the alleged shadow they cast acts as a ''focal point'' around which parties negotiate, with the statutory license acting as either a ceiling or a floor. 3/15/17 Tr. 1263 (Leonard). In a second-best market where price discrimination is economically appropriate, the continuation of a rate structure, over two rate cycles, might suggest the parties' acceptance of that structure as an efficient ''focal point,'' absent sufficient evidence to the contrary. However, as the Judges noted in *Web IV,* whatever theoretical appeal there may be in this focal point analysis (if any), it cannot be credited as an independent basis for using an existing statutory rate, absent ''a sufficient connection between theory and evidence.'' *Id.* at 26630.

[67] The Judges note that one of the two benchmarking methods relied upon by Copyright Owners subtracts the *statutory* rate set in *Web III* for noninteractive streaming from a royalty rate derived from the unregulated market for sound recording licenses between labels and interactive streaming services. This would seem to violate the Copyright Owners' own assertion that statutorily set rates cannot be used to establish reasonable rates. However, Copyright Owners' expert testified that, in his opinion, the Judges in *Web III* accurately identified the market rate for noninteractive streaming, so that rate could be utilized as if it were set in the market. 4/4/17 Tr. 4643 (Eisenach). This assertion proves too much. If one expert on behalf of a party may equate a rate set by the Judges with the market rate, why cannot the Judges, or any other party's expert, do the same? The end result of such an approach takes us back to the point the Judges made at the outset in this section: Any rate set by the Judges or influenced by the Judges' rate-setting process must be considered on its own merits.

[68] For example, the Judges regularly assume that the parties have ''baked-in'' the values of promotion and substitution when agreeing to rates. *See, e.g., Web IV,* 61 FR at 26326.

[69] The Shapley analyses conducted by Professors Marx and Watt also eliminate this ''walk away'' power by valuing all possible orderings of the players' arrivals. *See* discussion, *infra,* section V.D.1.

*D. Greater-Of Percent of Revenue/TCC Rate Structure*

In its revised rate proposal Google presents an all-in royalty rate for all service offerings set as the greater of 10.5% of revenue and 15% of TCC. TCC is one metric used in computing mechanical royalties under the 2012 rates and numerous direct licenses. In the 2012 rate structure a percentage of TCC is generally combined with percentage of revenue in a greater-of calculation, but is capped by a fixed per-subscriber royalty. *See, e.g.,* 37 CFR 385.13(a)(3), (b). A number of direct licenses in the record mirror this approach, or directly incorporate the terms of 37 CFR part 385. *See, e.g.,* Leonard AWDT ¶ 54 (describing royalty calculation methodology in direct licenses between [REDACTED] and several music publishers, including [REDACTED], [REDACTED], and [REDACTED]; License Agreement between [REDACTED] and [REDACTED], Trial Ex. 749, at ¶ 6(a) ([REDACTED]).

Several direct licenses between [REDACTED] and music publishers base royalties on a straight, uncapped [70] percentage of TCC, with no ''greater-of'' prong. *See, e.g.,* Music Publishing Rights Agreement between [REDACTED] and [REDACTED], Trial Ex. 760, at ¶ 5(a) (all-in mechanical rate of [REDACTED]% of TCC); accord Leonard AWDT ¶ 64 (describing terms of [REDACTED] direct licenses with music publishers including [REDACTED], [REDACTED], [REDACTED], [REDACTED], and [REDACTED]). Still other direct licenses include an uncapped TCC metric in a three-pronged ''greater-of'' calculation (along with percentage of revenue and a per-subscriber fee). *See, e.g.,* [REDACTED] Music Publishing Rights Agreement with [REDACTED], Trial Ex. 757, at ¶ 4(a)(ii) and (iii). Some direct licenses eschew TCC entirely and compute royalties as the greater of a percentage of revenue and a per-subscriber fee. See Leonard AWDT ¶ 71 (describing terms of six agreements with [REDACTED]).

Dr. Leonard, an expert for Google, reviewed and analyzed a number of direct licenses that Google and other services have entered into with muCsic publishers for, *inter alia,* mechanical rights. Dr. Leonard found the agreements to be useful benchmarks due to the similarity of rights, parties, economic circumstances, and time period. *See* 3/15/17 Tr. 1084 (Leonard). He found the direct agreements to support the reasonableness of Google's proposed rate structure, notwithstanding variations among the agreements and between many of the agreements and Google's rate proposal. At the time, Google was proposing a structure that (like other of the Services' proposals) largely followed the statutory rate structure, but without a Mechanical Floor. Nevertheless, Dr. Leonard's analysis demonstrates that the marketplace supports a number of rate structures, and that no single structure, or element of a structure, is indispensable. The Judges find that Dr. Leonard's analysis, and the marketplace benchmarks that he relies on, support the rate structure that Google proposes in its amended rate proposal.

*E. Judges' Conclusion Concerning Rate Structure*

In their rate determination proceedings, the Judges are informed, but not bound, by the parties' proposals. The Judges' task is to analyze the record evidence and determine a rate structure and rates that are reasonable, even though they might vary from any one party's proposals. Weighing all the evidence and based on the reasoning in this Determination, the Judges conclude that a flexible, revenue-based rate structure is the most efficient means of facilitating beneficial price discrimination in the downstream market.[71] The Judges, therefore, reject the per-play/per-user rate structures proposed by the Copyright Owners and Apple.

The Judges also find that the All-In rate is a necessary and proper element of a mechanical rate determination and conclude it must remain in the rate structure for the forthcoming rate period. Specifically, the Judges find that the deduction of performance royalties accounts appropriately for the perfect complementarity of the performance and mechanical licenses.[72] The Judges reject the argument that the All-In feature is unlawful because the Judges do not regulate performance rates. The All-In feature does not constitute a regulation of the performance rate, but rather represents a *cost exclusion (or deduction)* from the mechanical rate. The Judges and the parties recognize that the royalties otherwise due under a revenue-based format may exclude certain costs. *See* 73 CFR 385.11(Definition of ''Service Revenue,'' paragraph (3) therein).[73]

Two of the proposed rate structures—the Services' variations on the existing structure and Google's proposed structure—have the foregoing elements. Of those two, the Judges find that Google's proposal is superior for the following reasons.

First, the use of an uncapped TCC metric is the most direct means of implementing a key finding of the Shapley analyses conducted by experts for participants on both sides in this proceeding: The ratio of sound recording royalties to musical works royalties should be lower than it is under the current rate structure.[74] Incorporating an uncapped TCC metric into the rate structure permits the Judges to influence that ratio directly.[75]

Second, an uncapped TCC prong effectively imports into the rate structure the protections that record companies have negotiated with services to avoid the undue diminution

[70] In other words, TCC is not part of a ''lesser-of'' calculation with another metric such as a per-subscriber fee.

[71] Rates based on a percent-of-revenue (even without any alternative rate prongs) are themselves a form of price discrimination. See J. Cirace, *CBS* v. *ASCAP: An Economic Analysis of a Political Problem,* 47 Ford. Rev. 277, 288 (1978); W.R. Johnson, *Creative Pricing in Markets for Intellectual Property,* 2 Rev. Econ. Res. Copyrt., Issues 39, 40–41 (2005). To the extent they incorporate revenue-sharing in the underlying licenses between services and record companies, percent of TCC rates are also a form of price discrimination.

[72] As discussed infra, the fact that the performance right and the mechanical right are necessary complements to the licensees does not, however, end the inquiry. As Copyright Owners point out, the publishers use mechanical royalties in part to fund advances to songwriters or to assure their subsequent recoupment. The Judges will, therefore, retain the ''Mechanical Floor'' for the upcoming rate period, to ensure the continuation of this important source of liquidity to songwriters.

[73] The Judges recognize that the reduction of the mechanical rate interim calculation by the amount of the performance rate in ''Step 2'' (*see* § 385.12(b)(2)), acts as an exclusion from royalties rather than a deduction from revenue (by analogy, just as a tax credit is a subtraction from taxes, whereas a tax deduction is a subtraction from income). However, there is no statutory or regulatory impediment that prohibits this exclusion from royalties, especially given the economic interrelationship between performance rights and mechanical rights, discussed in the text *infra.*

[74] The Shapley analyses are discussed *infra*, section V.D.

[75] Google notes, concerning its proposal, that the removal of a cap on TCC ''does leave the services exposed to the labels' market power, and would warrant close watching if adopted.'' GPFF ¶ 73. While true, Google fails to note that the services are already exposed to the labels' market power. Record companies could, if they so chose, put the Services out of business entirely. Uncapping the TCC rate prong does not change that. Nor can any decision by this tribunal. While the possibility of the record companies using their market power in a way that harms the Services is a real concern, the Judges cannot allow that concern to grow into a form of paralysis, where any change from the status quo is deemed too dangerous to contemplate. *Any* increase in mechanical royalty rates, whether or not they are computed with reference to record company royalties, has the potential of leading to a bad outcome for the Services. *Even maintaining the status quo* could lead to a bad outcome for the Services, as it surely would for the songwriters and publishers. Ultimately the Judges must go where the evidence leads them and, as with any economic exercise, trust in the rational self-interest of the market participants.

of revenue through the practice of revenue deferral.[76] The Judges find that the present record indicates that the Services do seek to engage to some extent in revenue deferral in order to promote their long-term growth strategy. A long-term strategy that emphasizes scale over current revenue can be rational, especially when a critical input is a quasi-public good. Growth in market share and revenues is not matched by a commensurate increase in the cost of such inputs, whose marginal cost of production, or reproduction as in this case, is zero. It appears to the Judges that the nature of the downstream interactive streaming market, and its reliance on scaling for success, results necessarily in a competition *for the market* rather than simply competition *in the market.*[77] Revenue deferral argues against adopting a pure percent-of-revenue rate structure.

Third, in the absence of Congressional guidance as to the meaning of a ''reasonable rate,'' the Judges determine that, as a matter of policy, transparency and administrative rationality are factors in determining whether a rate is ''reasonable.'' Those who pay and receive royalties, those who calculate the royalties, and those (like the Judges) who are sometimes called upon to interpret the regulations implementing the royalties, are best served by a rate structure that is understandable and administrable. Absent compelling reasons to adopt a more complex rate structure (which are not present in the record), simpler is better.[78] Google's proposed rate structure reduces the Rube-Goldberg-esque complexity and impenetrability of the existing, settlement-based rate regulations. In particular, it merges ten separate rates for different service offerings into a single rate that would apply to all service offerings, thus avoiding the potential for confusion and conflict as new service offerings emerge that do not fall neatly into any of the existing categories.

Fourth, Google's proposed rate structure is supported by voluntary agreements that were reached outside the context of litigation. They are thus free from trade-offs motivated by avoiding litigation cost, as distinguished from the underlying economics of the transaction. The same cannot be said of the existing rate structure. While both are affected by the ''shadow'' of the compulsory license, the Judges find the voluntary agreements more informative of the behavior of market participants.

The Judges adopt Google's proposed rate structure for the foregoing reasons.[79] However, the Judges modify Google's proposed rate structure by including the Mechanical Floor from certain configurations in the existing rate structure. The Mechanical Floor appropriately balances the Service's need for the predictability of an All-In rate with publishers' and songwriters' need for a failsafe to ensure that mechanical royalties will not vanish either through the actions of the Services or the PROs and the Rate Court. Testimony of publishers and songwriters has established the critical role that mechanical royalties play in making songwriting a viable profession.[80]

The Judges reject the Services' arguments for eliminating the Mechanical Floor. For example, the Judges find the Services' argument that the mechanical right has no standalone value to be incomplete and, to an extent, self-serving. To the music publishers and songwriters, the mechanical right does have a value in the funding of songwriters, a value not provided by the performance royalty. By analogy, the cost of any publisher input, not just the cost of providing liquidity to songwriters, such as, for example, the cost of heating the buildings in which songwriters toil, has no standalone value to the Services, yet no one would assert that the licensors are not entitled to royalties from which they can recover their heating costs. Liquidity funding for songwriters is a necessity, just as heat is a necessity—the complementary nature of the rights *to the Services* is of no relevance.

The Judges also reject Apple's argument that the Mechanical Floor should be eliminated because of the potential for fragmented musical works licenses due to threatened publisher withdrawal from PROs, and the creation of new PROs. The Services have offered no evidence that the introduction of the new PRO, Global Music Rights, will have any impact on the performance royalty rate. As confirmed by recent litigation, partial withdrawals are not permitted by the rate court, the Second Circuit, or the Department of Justice. There is no evidence of a trend of increasing performance rates. Fractional (a/k/a fragmented) licensing has always been present in the market. *See* CORPFF at pp. 87–90 (and record citations therein).

Finally, the Judges reject Google's proposed rates within that structure. Google's proposed rates are derived from the subpart A benchmark that the Judges have rejected. *See* GPFF ¶¶ 21, 26–30.[81] The Judges look elsewhere in the record for reasonable percent-of-revenue and TCC rates to use in the two prongs of Google's proposed greater-of rate structure.

The Judges' adoption of a Mechanical Floor for the selected streaming services satisfies the objectives of section 801(b)(1). The Mechanical Floor offers protection for Copyright Owners, thus maximizing the availability of creative works to the public. The ''safety net'' of the Mechanical Floor assures a fair return to Copyright Owners, serving as a counterweight to the All-In rate, without an unfair impact on the income of the copyright users. The balanced protection of the songwriter's livelihood afforded by the Mechanical Floor recognizes the contribution of musical works to all music delivery mechanisms. Finally, the current regulations include Mechanical Floor rates; the Judges' retention of those rates for streaming services is not disruptive to the music industry.

In the Owners' Motion, the Copyright Owners argued that the Judges' elimination of a subscriber-based minimum fee for paid locker services and limited downloads could only have been an oversight. For all the reasons detailed in the Judges' Order on the motions for clarification, the Judges' decision was purposeful. Paid locker

[76] *See* 4/6/17 Tr. 5215–16 (Leonard); *see also* GPFF ¶ 73 (arguing that ''removing the caps allows the TCC prong to flexibly protect against downside risks associated with revenue deferment, displacement, or attribution issues.'').

[77] This is the form of dynamic competition known as Schumpeterian competition (named after the economist Joseph Schumpeter). Such competition emphasizes the importance of the dynamic creation of new markets and ''new demand curves,'' recognizing that short-term profit or revenue maximization may be inconsistent with the rationality of competing for the market in this manner.

[78] ''There is beauty in simplicity.'' 3/23/17 Tr. at 2855 (Ghose).

[79] The Copyright Owners have two overarching objections to Google's revised rate proposal. The first is a procedural objection: Google's revised proposal was submitted after all evidence was taken and the Copyright Owner's had no opportunity to cross-examine any witness about it. *See* CO Reply to GPFF at 1–2, 18. Google was entitled, under the Judges' procedural regulations, to change its rate proposal up to, and including, the filing of proposed findings and conclusions. 37 CFR 351.4(b)(3). Google did so—at the Judges' request. *See* 4/13/17 Tr. 6019. The Judges find no merit in the Copyright Owners' procedural objection.

The Copyright Owners also argue that Google's revised rate proposal is without evidentiary support. *See, e.g.,* CO Reply to GPFF at 2, 15–18. The Judges do not rely on Google's proposed findings. Rather, the Judges rely upon the evidence in the record they deem relevant and persuasive. The Judges have found sufficient evidence to support the rate structure, and the rates within that structure, as detailed in this Determination. The Determination speaks for itself.

[80] *See infra*, section VI.A.

[81] The subpart A benchmark is discussed *infra*, section V.B.3.

services and limited offerings are licensed uses that are of a nature totally different from other streaming services. The existing regulations treated them differently and afforded them an alternative minimum royalty. The existing minimum for these services was not a Mechanical Floor.

**V. Determining Royalty Rates**

Establishing a rate structure resolves only one aspect of the overall rate determination. The next issue for the Judges to decide is the setting of rates *within* the appropriate rate structure. In that regard, it is noteworthy that several of the Services' expert economists have asserted that, although the 2012 rate structure is an appropriate benchmark, the rates within that structure should be modified.[82] Thus, the Judges must consider the record evidence that relates to the rates themselves in order to determine the rates to be set for the forthcoming rate period within the price discriminatory rate structure.

*A. Rejection of the Copyright Owners' Approach*

Copyright Owners proposed a single per-unit rate (in their greater-of format). They did not propose a set of different rates (per-unit or otherwise), that would be applicable to a rate structure similar to the 2012 rate structure. Thus, the Judges consider the benchmarking approach undertaken by Copyright Owners for the purpose of determining whether any portions of their benchmarking exercise provides evidence of rates that the Judges should properly incorporate into the differentiated rate structure they are adopting in this determination.

Copyright Owners' proposal for a per-unit rate is based on an overarching premise: A single musical work has an ''inherent value.'' See, *e.g.,* Israelite WDT ¶¶ 29, 31, 33, 48; Herbison WDT ¶ 35; Brodsky WDT ¶ 68. To make that principle operational, Copyright Owners presented a benchmarking analysis through Dr. Eisenach, one of their economic expert witnesses.

1. Dr. Eisenach's Methodology

a. Benchmarking

Dr. Eisenach sought to identify benchmarks that support Copyright Owners' per-play and per end-user rate for the mechanical license. He began by noting that ''an economically valid approach for assessing the value of intellectual property rights which are subject to compulsory licenses is to examine *market-based valuations* of reasonably comparable benchmark rights—that is, fair market valuations determined by voluntary negotiations.'' Eisenach WDT ¶ 8 (emphasis added). In selecting potential benchmarks, Dr. Eisenach identified what he understood to be key characteristics'' that would make a benchmark useful: ''[U]nderlying market factors . . . ; the term or time period covered by the agreements; factors affecting the relative bargaining power of the parties; and differences in the services being offered.'' *Id.* ¶ 80.

Dr. Eisenach found useful the license terms for the *sound recording rights* utilized by interactive streaming services, because they are negotiated freely between record companies (a/k/a labels) and the interactive streaming services. *Id.* These rates made attractive inputs for his analysis because they: (1) Relate to the same composite good—the sound recording that also embodied the musical work; and (2) the interactive streaming service licensees were the same licensees as in this proceeding. Thus, to an important degree, Dr. Eisenach found these agreements to possess characteristics similar to those in the mechanical license market at issue in this proceeding. Moreover, Dr. Eisenach found that ''[d]ata on the royalties paid under these licenses are available and allow . . . estimat[ion of] the rates actually paid by the [interactive] streaming services to the labels for sound recordings on both a per-play and a per-user basis.'' *Id.*

However, as Dr. Eisenach noted, these benchmark agreements related to a different right—the right to a license of sound recordings—not the right to license musical works broadly, or to the mechanical license more specifically. Thus, as with any benchmark that does not match-up with the target market in all respects,[83] Dr. Eisenach had to examine how the rates set forth in the benchmark agreements for interactive streaming of sound recordings could be utilized. *Id.* More particularly, Dr. Eisenach posited that there may be a relationship (or ratio) between the sound recording royalty rate and the musical works royalty rate. To that end, he ''examine[d] a variety of markets in which sound recording and musical works rights are *both* required in order to ascertain the relative value of the two rights as actually reflected in the marketplace.'' *Id.* (emphasis added).

Through this examination, Dr. Eisenach concluded that these proposed benchmarks ''establish upper and lower bounds for the relative value of sound recording and musical works rights . . . estimate[d] to be between 1:1 and 4.76:1.'' *Id.* To make these ratios more instructive, the Judges note that the inverse of these ratios (*e.g.,* 1:4.76 instead of 4.76:1) can be expressed as a percentage. Thus, the ratio of 1:4.76 is equivalent to a statement that musical works royalties equal 21% of sound recording royalties in agreements struck in the purported benchmark market. More obviously, the 1:1 ratio means that, in agreements within that purported benchmark market, musical works royalties equal 100% of sound recording rates. By converting the ratios into percentages, it is easier to see that the high end of Dr. Eisenach's benchmark range is almost five times as large as the low end of the range.

b. Dr. Eisenach's Potential Benchmarks

Dr. Eisenach considered a variety of benchmark categories in which the licensee was obligated to acquire licenses for musical works and licenses for sound recordings. His selection and consideration of each category of benchmark markets are itemized below.

i. The Current Section 115 Statutory Rates

The current statutory rate structure contains several alternate rates explicitly calculated as a percentage of payments made by interactive streaming services to the record companies for sound recording rights. Such rates are identified in the industry as the ''TCC'' rates, an acronym for ''Total Content Cost.'' *Id.* ¶ 82.[84] In the subpart B category, the TCC is 22% for ad-supported services and 21% for portable subscriptions. *Id.; see also* 37 CFR 385.13(b)(2) and (c)(2).[85] These percentage figures correspond to sound recording to musical works royalties of 4.55:1 and 4.76:1, respectively.

Dr. Eisenach notes that these statutory rates were not set by the Judges pursuant to a contested hearing, but rather reflect two settlements, one in

[82] To be sure, those Services' witnesses advocated for a reduction in the rates, but their acknowledgement that the usefulness of the 2012 structure does not *ipso facto* demonstrate the appropriateness of the 2012 rates is a general point that the Judges readily accept.

[83] The lack of a perfect identity is essentially tautological. If a ''benchmark'' was identical to the target market, it would *be* the target market. The issue for economists and for the Judges is to identify the differences, weigh the importance of those differences, and then either rely on the benchmark, reject or adjust the benchmark so that it is probative, or find that the proffered benchmark is so inapposite that it, even with any proffered adjustments, it must be disregarded.

[84] This rate prong is sometimes identified as ''TCCi,'' which is an acronym the parties adopted for ''Total Content Cost Integrity.''

[85] Lower percentages apply if the record companies' revenue includes revenue to be ''passed through'' by them to pay mechanical license royalties. However, according to Dr. Eisenach, such ''pass-throughs'' are not typical. *Id.* at 82 n.67.

2008 and the other in 2012. *Id.* ¶ 83. However, Dr. Eisenach discounts the value of these settlement rates for three reasons. First, he notes that they were established prior to the ''marketplace success'' of Spotify in the interactive streaming industry.[86] Second, he notes that the settlements, although voluntary, ''were negotiated under the full shadow of the compulsory license.'' Third, he finds that, although the settlement incorporates rate prongs based on a percent of sound recording rates (the TCC prongs), those provisions are part of a ''lesser of'' segment of the rate structure, and thus capped by alternative per subscriber rates. *Id.* & n.70. Thus, Dr. Eisenach concludes: ''In my opinion, the evidence . . . indicates that the relative valuation ratios implied by the current section 115 compulsory license . . . represent *an upper bound on the relative market valuations* of the sound recording and musical works rights.'' *Id.* ¶ 92 (emphasis added). (As an ''upper bound,'' these ratios would represent the lower bound of the reciprocal percentage of the value musical works rights relative to sound recording rights, again, 21% and 22%.).

The Judges note that Dr. Eisenach identifies the 21% and 22% TCC rates within the current rate structure. Thus, for example, if the sound recording royalty rate for interactive streaming is 60% of revenue, then, using these TCC figures, the implied musical work royalty rate is calculated as 12.6% of revenue (.21 × .60) (a ratio of 4.76:1), or 13.2% (.22 × .60) (a ratio of 4.5:1). Again, because Dr. Eisenach opines that these are upper bounds on the relative market valuations,'' that is the equivalent of opining that they represent the lower bound of a percentage-based royalty calculated via this ratio approach.

ii. Direct Licenses Between Parties Potentially Subject to a Section 115 Compulsory License

Dr. Eisenach also examined direct agreements between record companies and interactive streaming services that contained rates for sound recordings and mechanical royalties, respectively. *See, e.g., id.* ¶¶ 84–91. In such cases, the ratio of sound recording to musical works royalties ranged tightly between 4.2:1 and 4.76:1, closely tracking the regulatory ratios implicit in the section 115 TCC. *Id.* ¶ 92. (The 4.2:1 ratio equates to a TCC rate of 23.8%, and the 4.76:1 ratio equates to a mechanical rate of 21%.).

[86] Spotify was launched in the United States in the summer of 2011. *See* 3/20/17 Tr. 1778 (Page).

According to Dr. Eisenach, the similarity of these direct contract rate ratios to the statutory ratios reflects the ''shadow of the statutory license,'' by which direct negotiations between parties regarding rights that are subject to (or can be fashioned to be subject to) a statutory license are influenced by the presence of statutory compulsory rates and/or the prospect of a future rate proceeding. 4/4/17 Tr. 4591 (Eisenach) (''The underlying problem with looking at an agreement negotiated under the shadow of a license'' is that [i]t shifts bargaining power from the compelled party to the uncompelled party by the very nature of the exercise.'').[87]

Given these limitations, Dr. Eisenach concluded, as he did with regard to the actual section 115 rates licenses, that ''[i]n my opinion, the evidence presented . . . indicates that the relative valuation ratios implied by the . . . negotiations under [the statutory] shadow—ranging from 4.2:1 [23.8%%] to 4.76:1[21%]—represent an upper bound on the relative market valuations of the sound recording and musical works rights.'' Eisenach WDT ¶ 92.

iii. Synchronization Agreements

Synchronization (Synch) agreements are agreements by audio-video producers, such as movie and television producers, with, respectively, music publishers and record companies, allowing for the use, respectively, of the musical works and the sound recordings in ''timed synchronization'' with the movie or television episode. *See generally* D. Passman, *All you Need to Know About the Music Business* 265 (9th ed. 2015). Dr. Eisenach found these Synch Agreements to be a mixed bag in terms of their value as a benchmark. On the one hand, he recognized that the licenses they conveyed ''do not apply to music streaming services as such'' but, on the other hand, they ''are negotiated completely outside the shadow of the compulsory license. . . .'' *Id.* ¶ 93. Dr. Eisenach notes, from his review of other testimony and an industry treatise, that these freely negotiated market agreements grant the musical composition royalty payments equal to the corresponding royalty paid for the sound recording,'' which is the equivalent of a 1:1 sound recording to musical works ratio.[88] *Id.* ¶¶ 94–95 & nn.87, 88.

[87] The Judges discuss the issue of the ''shadow'' of the statutory license in section IV.C.3.

[88] Dr. Eisenach finds this 1;1 ratio to be present in the two types of Synch agreements he identified. One version represents an agreement relating to a specific musical work and sound recording combination. The other version, a ''Micro-Synch'' agreement, which he describes as ''essentially 'blanket' synch licenses, in that the license grants the right to synchronize not just one particular song . . . but any song in the publisher's catalog (or a significant portion thereof). . . .'' Eisenach WDT ¶ 96.

Dr. Eisenach finds this 1:1 relationship to be important benchmark evidence, concluding:

> The synch and micro-sync examples confirm that in circumstances in which licensees require both sound recording and musical composition copyrights in order to offer their service, *and* where that service is not entitled to a compulsory license for either right, the sound recording rights and the musical composition rights are in many cases equally valued, that is, the ratio of the two values is 1:1.

*Id.* ¶ 98.

iv. YouTube Agreements

Dr. Eisenach also examined licenses between: (1) YouTube (owned by Google) and record companies; and (2) YouTube and music publishers, to determine their potential usefulness as benchmarks. He noted that they provide further insight into the relative value of sound recordings and musical works. He added that, because these licenses also include [REDACTED] (which, he noted, are not [REDACTED] uses) these rights are partially outside the purported shadow of compulsory licensing. Moreover, these agreements essentially grant to YouTube [REDACTED], analogous to the provision of on-demand streaming by the interactive services licensed under subpart B. Additionally, Dr. Eisenach noted that these YouTube agreements met certain standards for a useful benchmark, *viz.* the parties, the domestic (U.S.) market and the time period all correspond to the parties, market and time period involved here. *Id.* ¶ 100. For these reasons, Dr. Eisenach concluded that ''for purposes of assessing the relative value of the sound recording and musical works rights, the YouTube agreements represent reasonably comparable benchmarks for the purpose of assessing the relative value of sound recordings and musical works rights.'' *Id.*

In his original Written Direct Testimony, Dr. Eisenach relied upon seven agreements between YouTube and several music publishers pertaining to [REDACTED]. *Id.* ¶ 101 n.93. In those [REDACTED] agreements, Dr. Eisenach found that publishers receive [REDACTED] when the video is [REDACTED]. However, with regard to the revenue received by the record companies, Dr. Eisenach could only speculate based on public reports as to the percent of revenue received by the record companies for the sound recordings embedded in the posted YouTube videos. *Id.* ¶ 102. Thus, he was unable to make an informed argument in his *original* written testimony regarding the ratio of sound recording royalties to music publisher royalties in his YouTube [REDACTED] benchmark analysis.

However, after the Judges compelled Google to produce in discovery copies of the YouTube agreements with the record companies, Dr. Eisenach filed (with the Judges' approval) Supplemental Written Rebuttal Testimony (SWRT) addressing these agreements. In that testimony, Dr. Eisenach examined 49 YouTube licenses with eight record labels and four form agreements (under which approximately 1,350 independent labels are actively licensed), spanning the period 2012 to 2019. Eisenach SWRT ¶ 6 & n.5. Dr. Eisenach identified nine of these licenses specifically in his SWRT, and noted that YouTube paid to [REDACTED] for sound recordings in a [REDACTED]—which Dr. Eisenach found to be the comparable YouTube category—whereas the [REDACTED] received [REDACTED]. *Id.* & Table 1.

As Dr. Eisenach accurately calculated, the [REDACTED] revenue split reflects a ratio of [REDACTED]:1, (a musical works rate equal to [REDACTED]% of the sound recording rate), whereas the [REDACTED] revenue split reflects a ratio of [REDACTED]:1 (a musical works rate equal to [REDACTED]% of the sound recording rate).

v. The Pandora ''Opt-Out'' Deals

Dr. Eisenach also examined certain direct licensing agreements entered into between Pandora and major music publishers from 2012 through 2016, to determine whether they constituted useful benchmarks in this proceeding. *Id.* ¶ 103. Pandora had negotiated these direct agreements with major publishers for musical works rights after certain publishers had decided to ''opt-out,'' *i.e.,* to withdraw their digital music performance rights from performance rights organizations (PROs), and asserted the right to negotiate directly with a digital streaming service. As Dr. Eisenach acknowledges, the music publishers' legal right to withdraw these rights remained uncertain during that five year period. Nonetheless, Pandora negotiated several agreements with an understanding that the rates contained in those direct agreements might not be subject to rate court review.[89]

Given this phenomenon, and given that the markets and parties involved in the Pandora agreements are somewhat comparable to the markets and parties at issue in this proceeding,[90] Dr. Eisenach concluded that these agreements provided ''significant insight into the relative value of the sound recording and musical works rights in this proceeding.'' *Id.*

Dr. Eisenach compared the musical works rates in these ''opt-out'' agreements with the sound recording royalty rates paid by Pandora, which he obtained from the revenue disclosures in Pandora's Form 10K filed with the SEC that provided royalties (''Content Costs'') as a percent of revenue, and he also relied on data contained in prior rate court decisions. Eisenach WDT ¶ 125 & Table 6. With this data, he calculated that the ratio of sound recording: Musical works royalties in existing agreements was [REDACTED]:1 for 2018, *i.e.,* the musical works rate equaled [REDACTED]% of sound recording royalties. This [REDACTED]% ratio would correspond to a mechanical rate of [REDACTED], assuming, *arguendo,* the sound recording rate is 60%.

Dr. Eisenach also made an estimation and forecast, linking the passage of time to an assumption that after the Rate Court proceedings concluded (and all appeals were exhausted) the parties, without further legal uncertainty, would permanently be ''permitted to negotiate freely outside of the control of the rate courts.'' He made this estimation and forecast through a temporal linear regression, extrapolating from the prior [REDACTED] in these Pandora ''opt out'' musical works rates. *See* Eisenach WDT ¶ 129. Dr. Eisenach's linear regression further [REDACTED] the ratio to [REDACTED], which would be equivalent to [REDACTED] the musical works rate, as a percentage of sound recording royalties, from the [REDACTED]% noted above for actual agreements in force in 2018 to [REDACTED]%, almost a [REDACTED]% [REDACTED] based on the extrapolation alone. *Id.* ¶¶ 104; 128 & Table 8, Fig. 13. (This [REDACTED]% ratio would correspond to a musical works rate of [REDACTED], assuming the sound recording rate is 60%.)

However, the assumption behind Dr. Eisenach's regression was not borne out. In 2015, the Second Circuit Court of appeals affirmed a 2014 decision by the Southern District of New York, prohibiting such partial withdrawals. *In re Pandora Media,* 785 F.3d 73, 77–78 (2d Cir. 2015), *aff'g* 6 F. Supp. 3d 317, 322 (S.D.N.Y. 2014). Subsequently, in August 2016, the Department of Justice issued a statement announcing that, consistent with these judicial decisions, it would not permit partial withdrawals under the existing consent decrees. *See* Eisenach WDT ¶ 114, n.109. Moreover, there were actual Pandora ''Opt-Out'' agreements that set rates through 2018 that established a sound recording to musical works ratio of [REDACTED]:1, that Dr. Eisenach chose to disregard in favor of his extrapolated lower ratio.

Having calculated these five benchmarks, Dr. Eisenach applied them in two separate methods to estimate the mechanical rate to be adopted in this proceeding.

c. Dr. Eisenach's Ratio Equivalency Approach

Dr. Eisenach testified that ''[f]or music users that require both sound recording rights and musical works rights, the two sets of rights can be thought of in economic terms, as *perfect complements* in production: Without both inputs, output is zero.'' *Id.* ¶ 76 (emphasis added).[91] Dr. Eisenach also notes that, ''for interactive streaming services, the two categories of rights [sound recordings and musical works] are further divided into a reproduction license [*i.e.,* the mechanical license] and a performance license . . . .'' *Id.* (Thus, the mechanical license and the performance license likewise are perfect complements with each other and with the sound recording license.)

[89] The ''rate court'' is a short-hand reference to the proceedings before designated judges in the U.S. District Court for the Southern District of New York, who set performance royalty rates, pursuant to existing consent decrees between the U.S. Department of Justice and, respectively ASCAP and BMI.

[90] At the relevant time, Pandora operated a noninteractive service and only paid the performance right royalty, not the mechanical right royalty, for the right to use musical works. Because the parties agree that the performance right and the mechanical right are perfect complements, Pandora's payments for the performance right are relevant and probative.

[91] Google's economic expert, Dr. Gregory Leonard, made an important qualification regarding this point: At the time a musical work is selected by a label for recording by an artist, *ex ante* recording, the label can choose among competing and substitutable musical works. Thus, it is only *ex post* recording that the particular musical work that had actually been selected is necessary to create a level of output (and value) greater than zero. 4/5/17 Tr. 5180–81 (Leonard).

Dr. Eisenach acknowledges that [t]he relative value of sound recording [to] musical works licenses may depend on a variety of factors, and traditionally the relationship has differed across different types of services and situations.'' *Id.* ¶ 78. Dr. Eisenach eschewed unnecessary ''assumptions, complexities and uncertainties associated with theoretical debates'' as to why the particular existing market ratios existed. *Id.* ¶ 79. Rather, instead of ''put[ting] forward a general theory of relative valuation,'' he found it ''sufficient . . . to assume that the relative values of the two rights should be stable across similar or identical market contexts.'' *Id.*

d. Dr. Eisenach's Two Methods for Estimating the Mechanical Rate

i. Method #1

Dr. Eisenach's Method #1 for estimating the mechanical rate is based on the following premises:

1. The sound recording royalty paid by *interactive* streaming services is unregulated and thus negotiated in the marketplace. Eisenach WDT ¶ 16.

2. The sound recording royalty paid by *noninteractive* services is regulated, but, Dr. Eisenach finds the royalties set by the Judges in *Web III* to reflect a market rate. 4/4/17 Tr. 4643 (Eisenach); *see also* Eisenach WDT ¶ 136 & n.123.

3. The *interactive* streaming services require a mechanical license (the license at issue in this proceeding), whereas the *noninteractive* services are not required to obtain a mechanical licenses.[92]

4. According to Dr. Eisenach, the difference between the rates paid by interactive services and non-interactive services for their respective sound recording licenses equals the value of the remaining license, *i.e.,* the mechanical license. *Id.* ¶ 137 (''[T]he difference between these two rights is akin to a 'mechanical' right for sound recordings, directly paralleling the mechanical right for musical works in this proceeding.'').[93]

5. The mechanical rate implied by this difference in sound recording rates must be ''adjust[ed] for the relative value of sound recordings [to] musical works'' (as discussed *supra*). *Id.* ¶ 140.

Dr. Eisenach combines these steps and expresses his Method #1 in the form of an algebraic equation:

$$MR_{MW} = (SR_{IS} - SR_{NIS})/RV_{SR/MW},$$

*Where*

$MR_{MW}$ = Mechanical Rate for Musical Works
$SR_{IS}$ = Sound Recording Rate for Interactive Streaming (All In)
$SR_{NIS}$ = Sound Recording Rate for Non-Interactive Streaming (Performance Only)
$RV_{SR/MW}$ = Relative Value of Sound Recording to Musical Works Rights.

Eisenach WDT ¶ 140.

Dr. Eisenach determined the per play rate paid by interactive services by identifying certain services and ''tally[ing] the total payments . . . and divid[ing] by the total number of interactive streams the service reports.'' *Id.* ¶ 148. The average sound recording per play royalty calculated by Dr. Eisenach was $[REDACTED] (or $[REDACTED] per 100 plays), when excluding [REDACTED]. *Id.* Table 11.[94]

The final inputs for Dr. Eisenach's Method #1 have already been identified, *i.e.,* the $0.0020 per play (or $0.20 per 100 plays) royalty rate estimated for noninteractive streaming, and the several benchmark ratios of sound recording: Musical works royalties in the markets selected by Dr. Eisenach. After Dr. Eisenach inserted the foregoing data into the algebraic expression set forth above, he presented his data in the following tabular form:

MUSICAL WORKS MECHANICAL PER 100 PLAYS RATE CALCULATION

[Method 1]

| $SR_{IS}$ per 100<br>(1) | $SR_{NIS}$ per 100<br>(2) | Difference<br>(3) | $RV_{SR/MW}$<br>(4) | $MR_{MW}$ per 100<br>(5) |
|---|---|---|---|---|
| $[REDACTED] | $0.20 | $[REDACTED] | 1:1 | $[REDACTED]. |
| $[REDACTED] | 0.20 | $[REDACTED] | [REDACTED]:1 | $[REDACTED]. |
| $[REDACTED] | 0.20 | $[REDACTED] | [REDACTED]:1 | $[REDACTED]. |
| $[REDACTED] | 0.20 | $[REDACTED] | [REDACTED]:1 | $[REDACTED]. |
| $[REDACTED] | 0.20 | $[REDACTED] | 4.76:1 | $[REDACTED]. |

*See id.,* Table 12.[95] Thus, applying his five potential benchmark ratios, Dr. Eisenach determined that the mechanical works royalty rate the Judges should set in this proceeding ranged from $[REDACTED] per play to $[REDACTED] per play (*see* column (5) above, dividing by 100 to reduce the rate from ''per 100'' to per play).

ii. Method #2

Dr. Eisenach describes his Method #2 as an alternative method of deriving a market-derived mechanical royalty. His Method #2 ''derive[s] an All-In musical works value based on the relative value of sound recordings to musical works and then remove[s] the amount of public performance rights paid for musical works, leaving just the mechanical rate.'' *Id.* ¶ 142. The algebraic expression for Method #2 is:

$$MR_{MW} = (SR_{IS}/RV_{SR/MW}) - PR_{MW},$$

*Where* $PR_{MW}$ is the public performance royalty rate for musical works, and the other variables are as defined and described in Method #1.

*Id.*

Dr. Eisenach calculates $PR_{MW}$, as an average of $[REDACTED] per 100 plays for the licensees that he included in his data analysis. *Id.* ¶ 156, Table 13. Applying all the inputs across the various benchmark ratios, the results from Dr. Eisenach's Method #2 can also be depicted in tabular form, as set forth below:

[92] The affected industries have agreed through settlements that interactive services pay mechanical royalties but noninteractive services do not. *See* Parness WDT ¶ 7. No party in the present proceeding has sought a mechanical license rate for noninteractive services.

[93] Dr. Eisenach refers at times to this difference in sound recording royalties as the ''implied value of the mechanical right.'' *See, e.g., id.* ¶ 138. However, this difference is only an input for deriving the mechanical rate implied by his analysis (as noted in the subsequent step), and the Judges choose to consider the final rate developed by Dr. Eisenach in Method #1 as the ''implied mechanical rate'' he advances through this method.

[94] Dr. Eisenach's decision to rely on a per play calculation that excluded [REDACTED] and all of Dr. Eisenach's challenged data selections, are discussed *infra* in the Judges' analysis of his benchmarking approach and the criticisms levelled by the Services.

[95] Dr. Eisenach testified that the [REDACTED]:1 ratio should be revised [REDACTED] to [REDACTED]:1, to reflect the sound recording royalty rates in the [REDACTED] licenses he examined after the Judges compelled [REDACTED] to produce [REDACTED]'s agreements with record companies.

MUSICAL WORKS MECHANICAL PER 100 PLAYS RATE CALCULATION
[Method 2]

| $SR_{IS}$<br>(1) | $RV_{SR/MW}$<br>(2) | Ratio adj.<br>(3) = (2) × (1) | (Avg.) $PR_{MW}$<br>(4) | $MR_{MW}$<br>(5) |
|---|---|---|---|---|
| $[REDACTED] | 1:1 | $[REDACTED] | $[REDACTED] | $[REDACTED]. |
| $[REDACTED] | [REDACTED]:1 | $[REDACTED] | $[REDACTED] | $[REDACTED]. |
| $[REDACTED] | [REDACTED]:1 | $[REDACTED] | $[REDACTED] | $[REDACTED]. |
| $[REDACTED] | [REDACTED]:1 | $[REDACTED] | $[REDACTED] | $[REDACTED]. |
| $[REDACTED] | 4.76:1 | $[REDACTED] | $[REDACTED] | $[REDACTED]. |

*See id.,* Table 14.

After considering all of his benchmarks from both of his methods, Dr. Eisenach concluded that ‘‘the YouTube and Pandora [Opt Out] agreements represent the most comparable and reliable benchmarks, implying ratios of [REDACTED]:1 and [REDACTED]:1, respectively, with a mid-point of [REDACTED]:1.’’ *Id.* ¶ 130 (The Judges note that converting these end-points and mid-point of his range to TCC percentages results in a range from [REDACTED]% to [REDACTED]% and a mid-point of [REDACTED]%.) [96]

2. Analysis of Dr. Eisenach's Benchmark Methods

a. Dr. Eisenach's Ratio of Sound Recordings-to-Musical Works

The Judges find Dr. Eisenach's attempt to identify comparable benchmarks and corresponding ratios of sound recording rates to musical works rates to be a reasonable first step in seeking to identify usable benchmarks. The Judges find potentially useful his decision to rely on empirics over abstract theory, *viz.,* that a tightly clustered set of ratios across several markets would tend to support applying a reasonably central tendency from among those ratios to identify a ratio that could aid in the identification of the statutory rates.[97]

However, the data that Dr. Eisenach identified was not sufficiently clustered to establish a predictive ratio within the data set. That is, the problem does not lie in the analysis, but rather in the implications from the data regarding ratios of sound recording royalties to musical works royalties. The Services make this very criticism, noting the instability of the ratio across the several markets in which Dr. Eisenach identified potential benchmarks. See SJRPFF ¶ 241 (and record citations therein). Apple finds that the wide range of ratios is unsurprising, because Dr. Eisenach's benchmarks do not relate to the same products and same uses of the two rights. Indeed, Apple's [REDACTED], confirming, according to Apple, that there is no fundamental market ratio that can be applied in this proceeding. Dorn WRT ¶¶ 6, 24, 28–29.

To be sure, this point does not go unnoticed by Dr. Eisenach, who focuses on the royalty ratios arising from two potential benchmarks in the middle of his range—the Pandora ‘‘Opt-Out’’ agreements and the User Audio YouTube agreements.

The Services assert an additional and fundamental criticism of Dr. Eisenach's approach. They note that his use of sound recording royalties paid by interactive services embeds within his analysis the inefficiently high rates that arise in that unregulated market through the complementary oligopoly structure of the sound recording industry and the Cournot Complements inefficiencies that arise in such a market. *See* Corrected Written Rebuttal Testimony of Michael L. Katz, Trial Ex. 886, ¶ 56; Marx WRT ¶¶ 137–141; Hubbard CWRT ¶¶ 6.26–6.27; Leonard WRT ¶¶ 24, 44. The Judges agree with this criticism.

The Judges explained at length in *Web IV* how the complementary oligopoly nature of the sound recording market compromises the value of rates set therein as useful benchmarks for an ‘‘effectively competitive’’ market. In *Web IV,* the Judges were provided with evidence of the ability of noninteractive services to steer some performances toward recordings licensed by record companies that agreed to lower rates in exchange for increased plays. Here, the Judges were not presented with such evidence, likely because an interactive streaming service needs to play any particular song whenever the listener seeks to access that song (that is the essence of an *interactive* service). Thus, the Judges have no direct evidence sufficient to apply a discount on the interactive sound recording rate to adjust that potential benchmark in order to fashion an effectively competitive rate, as required by the ‘‘reasonable rate’’ language in section 801(b)(1).

b. Dr. Eisenach's Specific Benchmarks

i. Section 115 Benchmark

The Services assert that Dr. Eisenach's calculation of a section 115 ‘‘valuation ratio’’ of 4.76:1 is incomplete, because he limited this statutory ratio to the 21% and 22%TCC prongs. They note that under the percentage-of-revenue prong of section 115 (10.5%), this statutorily-derived ratio would have ranged between 5:1 and 6:1, *see* 4/5/17 Tr. 5152 (Leonard), implying a musical works rate equal to only 16.67% to 20% of sound recording royalty rates. The Judges agree that Dr. Eisenach's statutory benchmarks would have been more comprehensive if he had included the ‘‘valuation ratios’’ derived from this headline prong of the present royalty rate structure. However, the fact that the existing rate structure, on which the Services rely in this proceeding, includes the potential use of the 21% and 22% prongs, demonstrates the usefulness of this benchmark as a representation of a rate the parties are willing to accept.

ii. Direct Licenses

The Services disagree with Dr. Eisenach's minimization of the relevance of this benchmark. They argue that the direct licenses between

[96] Dr. Eisenach also calculates a per user rate, using his Method #2. As he explains, ‘‘this is accomplished by calculating All-In publisher royalties on a per user basis and subtracting the average effective per-user performance royalties to publishers, leaving an appropriate rate for mechanical royalties.’’ *Id.* ¶ 159. He finds that the sound recording rate per user is $[REDACTED] (the per user analog to the $[REDACTED] per 100 plays in his per play analysis). Applying the same ratios and utilizing similar market data as in his per play approach, Dr. Eisenach concludes that a ‘‘mechanical rate of between $[REDACTED] and $[REDACTED] per user reflects the range of relative values for sound recordings and musical works. . . .’’ *Id.* ¶ 165. Finally, he notes that, at the [REDACTED]:1 ratio (his mid-point of the YouTube and Pandora benchmarks, the ‘‘mechanical only’’ rate would be $[REDACTED] per user (greater than the $1.06 per user rate proposed by Copyright Owners.) *Id.*

[97] Dr. Eisenach eschewed unnecessary ‘‘assumptions, complexities and uncertainties associated with theoretical debates’’ as to why the particular existing market ratios existed. *Id.* ¶ 79. In this regard, the Judges understand that Dr. Eisenach was following a well-acknowledged principle of economic analysis, articulated by the Nobel laureate economist Milton Friedman, who famously eschewed excessive theorizing that failed to match the predictive power of empirical analysis. *See* M. Friedman, *The Methodology of Positive Economics,* reprinted in D. Hausman, *The Philosophy of Economics* at 145, 148–149 (3d ed. 2008).

interactive services and music publishers ''are by far the most directly apposite benchmarks used in Dr. Eisenach's analysis,'' because they, like the section 115 rates and terms themselves, possess the characteristics of a useful benchmark, *viz.* they: (1) Are voluntary; (2) concern the same licensors/publisher; (3) relate to the same market; and (4) pertain to the same rights. *See* Katz WDT ¶¶ 97–113; Leonard AWDT ¶¶ 45–70; *see also* 4/5/17 Tr. 5152 (Leonard) (noting that, for services paying under the percentage-of-revenue prong under section 115 and based on prevailing sound recording rates, ''[t]he ratio would be more like . . . 5-to-1 to 6-to-1'').

The Judges find that these direct licenses are as useful, if not more so, than the 115 benchmark itself. The so-called ''shadow'' of section 115 provides a default rate for the licensing parties, so direct licenses that deviate in some manner from the rates in the statutory license are revealing a preference for other rates and terms that, at least marginally, are below the statutory rate. Thus, as the Services note, these benchmarks are useful, because ''these agreements . . . were voluntarily entered both in 2008 and 2012, by the very same publishers in the same markets and for the same rights. . . .'' SJPFF ¶ 261 (and record citations therein). More generally, the Judges find that the so-called ''shadow'' of the statutory license on a benchmark does not disqualify that benchmark as useful evidence, though it goes to its weight.

iii. Synchronization Licenses

The Services also take issue with Dr. Eisenach's inclusion of synchronization licenses in his collection of benchmarks. *See, e.g.,* Leonard WRT ¶¶ 37–40 (testifying that synchronization licenses are not comparable for interactive streaming licenses because synchronization differs in important economic respects from streaming); Hubbard CWRT ¶¶ 6.31–6.32 (testifying on various ''economic characteristics of synch licenses, that render the ratio between sound recording royalties and musical works royalties different between synch and interactive streaming services''); Marx WRT ¶¶ 148–151 (''Synch royalty rates are a poor benchmark for streaming royalty rates''). Even Dr. Eisenach acknowledged that, at best, the low ratio in the synch licenses indicates an unusually high musical works royalty rate among his collection of benchmarks. 4/4/17 Tr. 4671, 4799 (Eisenach); Eisenach WDT Appx. A–9.

In a prior proceeding, the Judges rejected the synch license benchmark as useful ''[b]ecause of the large degree of its incomparability.'' *See Phonorecords I,* 74 FR at 4519. The Judges find that nothing in the present record supports a departure from that prior finding. The lack of comparability remains because the synchronization market differs in important economic respects from the streaming market. *See* Leonard WRT ¶ 39. Because synch rights pertain to media such as music used in films or in television episodes,[98] the historical equal valuation of publishing rights and sound recording rights arises from the particular conditions faced in those industries. *Id.* Movie and television producers may have a certain musical work in mind as a good fit for a particular scene in the film. *Id.* However, these producers have the option of making their own sound recording of that musical work, and for this reason, cover songs are quite common in films. *Id.; see also* Ex. 1069, Marx WRT ¶ 149 (''Both film and television production companies have the option of recording their own versions of songs, rather than paying royalties to use a pre-recorded song. . . . This option gives the users of synch rights, such as movie producers, more bargaining power relative to the labels than would be the case with streaming services.''). Thus, the contribution to value of the sound recording is less vis-à-vis the musical work in the synch market. Leonard WRT ¶ 39.

Additionally, in the case of synchronization rights, the marketplace for sound recording rights is more competitive than other music licensing contexts because individual sound recordings compete against one another for inclusion in the final product (*e.g.,* a movie or television episode). By contrast, in the interactive streaming market, services must build a catalog of sound recordings and their included musical works, so that many works can be streamed to listeners. *Id.*[99] That is, in the interactive streaming market, the sound recordings are ''must have'' complements, not in competition with each other. However, in the synch market the sound recording of any given musical work identified by the movie or television produce is a substitute good, in competition with any other existing or future sound recording of the same musical work for inclusion in the movie or television show.

iv. YouTube Licenses

The Services disagree with Dr. Eisenach's opinion that the YouTube licenses on which he relies constitute strong benchmarks. As an initial point, they note that, from a statutory perspective, the video component of the YouTube licenses renders those licenses inapposite as benchmarks in this proceeding. *See* SJRPFF ¶ 249 (and record citations therein) (noting that YouTube's ability to utilize the ''safe harbor'' provisions of 17 U.S.C. 512 provides YouTube with strong negotiating power against publishers and labels because the copyright holders must identify unauthorized uploadings and issue ''take down notices,'' a cumbersome and often futile process). The Judges agree that this statutory provision significantly alters the bargaining landscape between the sound recording and the musical works licensors, on the one hand, and YouTube as the licensee, on the other.

The Services further maintain that, even assuming YouTube licenses are appropriate benchmarks, Dr. Eisenach has relied on the wrong type of YouTube licenses for his benchmark analysis. As noted, Dr. Eisenach selected the agreements and rates pertaining to [REDACTED]. He selected this type of YouTube contract because neither the musical works license nor the sound recording license is subject to the section 115 license. *See* SEJRPFF ¶ 350 (and record citations therein).

However, the Services maintain that the more appropriate YouTube benchmarks would be the agreements *between YouTube and publisher and record companies,* respectively, for [REDACTED]—agreements that contain a [REDACTED] royalty rate, rather than the [REDACTED] figure from the [REDACTED] YouTube agreements. If the Services' are correct in their assertion that the [REDACTED] YouTube agreements are the appropriate benchmark inputs, the sound recording: Musical works ratio (applying the [REDACTED] royalty rate) thus increases to as low as [REDACTED], implying a ratio as high as [REDACTED]:1, implying a musical works rate of [REDACTED]%, far lower than Dr. Eisenach's calculated YouTube royalty of [REDACTED]% (but still above Copyright Owners' proposed rate). If the [REDACTED] royalty rate of

[98] The Copyright Owners also rely on blanket (''microsynch'') licenses by which publishers grant their entire catalogs for use in synchronized audio-video productions, and they also rely on synch licenses for mobile and video game applications. The Judges' critique of synch licenses as benchmarks is equally applicable to these licenses.

[99] As discussed *infra,* Dr. Leonard makes an analogous point with regard to the weaker bargaining position of musical works when record companies and artists select a song to be recorded. Like the movie or television producer who can choose among a number of somewhat substitutable recordings, a record producer can choose among a number of somewhat substitutable musical works.

[REDACTED]% is applied instead, the ratio rises to [REDACTED], or [REDACTED]:1, implying a musical works rate of [REDACTED]%.

The Judges find that the static-image YouTube rates are more analogous to the interactive market, compared with the YouTube agreements concerning embedded videos. The salient rationale in Dr. Eisenach's analysis is the sound recording to musical works ratio, so injecting the video as another element of value into the mix renders the sound recording to musical works ratio too difficult to identify with sufficient certainty. However, the Services assert that, given that the Majors comprise [REDACTED]% of the YouTube market, the appropriate ratio should be [REDACTED], implying the [REDACTED]% of sound recording percentage identified above. The Judges find that it would be proper to weight the YouTube benchmark by applying a [REDACTED]% weight to [REDACTED]%, and a [REDACTED]% weight to [REDACTED]%, which results in a benchmark rate of [REDACTED]% ([REDACTED]).[100]

Finally, the Services take issue with Copyright Owners' assertion that YouTube is a competitor to interactive streaming services, despite the acknowledgements by those services that such competition is present. *Compare* CPFF ¶¶ 263–266 (and record citations therein) *with* SJRPFF ¶¶ 263–266 (and record citations therein). The Judges find that competition does not in itself make the rates in those YouTube agreements particularly helpful benchmarks, because the addition of video content creates a bundling of value distinguishable from the value of interactive streaming alone. However, Google's/YouTube's acknowledgement of the competitive posture of YouTube *vis-à-vis* interactive streaming services renders the ratio of sound recording: Musical works royalty ratio in the YouTube stati-screen agreements a useful benchmark in this proceeding.

Even in those cases, however, the YouTube royalty rates and ratios remain imperfect because other relevant factors are not necessarily constant. The Judges agree that the relatively strong bargaining power of the licensee created by the DMCA ''safe harbor'' provisions, distinguishes the YouTube market from the market for streaming services. Copyright Owners seek to minimize this lack of comparability by arguing that, although YouTube's relatively strong bargaining power depresses the copyright holders' royalties, ''[s]ince the DMCA safe harbor applies equally to sound recording and musical works copyrights, there is no reason to think that their relative valuation would be affected.'' Eisenach WRT at 66. However, Copyright Owners do not provide any factual support for this conclusory assumption of a ''relative value'' effect, and the Judges thus cannot find with sufficient certainty that it in fact is likely that the enhanced bargaining position of YouTube affects the publishers and the labels equally. Accordingly, the Judges do not find the YouTube market and licenses to be sufficiently analogous to the interactive streaming market to make the benchmark derived from the YouTube analysis to be useful in determining rates in this proceeding.

v. Pandora ''Opt-Out'' Agreements

Together with his YouTube benchmark, Dr. Eisenach finds the Pandora ''Opt-Out'' agreements to be the most useful among the several potential benchmarks he examined. The Judges agree. The Judges agree with Dr. Eisenach that the Pandora ''Opt-Out'' agreements are useful benchmarks. These agreements have the level of comparability necessary for a benchmark to be useful. However, the Judges do not agree with Dr. Eisenach's attempt to extrapolate from the actual rates in those Opt-Out Agreements. Rather, the Judges find that the [REDACTED]:1 ratio Dr. Eisenach identified for the year 2018 in existing agreements is the most useful benchmark derived from the ''Opt-Out'' data. As the Services note, Pandora's most recent direct license agreements during the ''Opt-Out'' period with the publishers who control many of the works embodied in the sound recordings performed by Pandora provide that publisher royalties will be determined [REDACTED].[101] This resulted in a shift of the sound recording: Musical works ratio to [REDACTED]:1, implying a musical works TCC percentage of [REDACTED]%. *See* Katz CWRT ¶¶ 101–104; Herring WRT ¶¶ 28–29).

The Judges reject Dr. Eisenach's identification of a useful trend in the shrinking of that ratio (*i.e.,* a growth in the musical works royalty percentage). His change in the ratio to [REDACTED]:1 was driven by expectations regarding the likelihood of an uncertain change in the legal landscape regarding publisher withdrawals from performing rights organizations. Such uncertain potential changes are not well-captured by mapping them over a time horizon. Moreover, as the Services note and as Dr. Eisenach concurs, even assuming such a change in relative uncertainty could be captured in a regression, other regression forms, such as a quadratic form, could be used to demonstrate a return of the ratio to its prior level (an equally plausible future event) rather than a continuation of its shorter-term increase. *See* 4/5/17 Tr. 495963 (Katz); Katz CWRT ¶¶ 104–107, Table 1, F; 4/4/17 Tr. 4807–08 (Eisenach) (linear form of regression not ''material'').

c. Dr. Eisenach's per Play Sound Recording Rate

The Judges also have difficulty relying on the data set Dr. Eisenach developed for his estimation of a $[REDACTED] per play sound recording royalty rate. He used that $[REDACTED] per play figure in several benchmark ratios. Two principal problems with Dr. Eisenach's data are:

1. The data covered a non-random sample of only approximately 15% of all interactive plays; and

2. the data excluded [REDACTED]'s [REDACTED] services, large portions of the interactive streaming market. Inclusion of those [REDACTED] services would have reduced his per play rate from $[REDACTED] to $[REDACTED]. Inclusion of only [REDACTED] service would have reduced the $[REDACTED] estimate to $[REDACTED].

SJRFF ¶ 22 (and record citations therein).

Dr. Eisenach explained his small data sample as resulting in part from his deliberate decision to omit several sound recording labels [REDACTED], which he asserted gave them an incentive to allow [REDACTED] to pay below-market royalties. Eisenach WDT ¶ 150. The Judges acknowledge Dr. Eisenach's assertion that this fact could, on the margin, drive down the royalties paid by [REDACTED] to those labels. However, the evidence does not bear that out, because the royalty rates [REDACTED] pays to these labels are comparable to the rates it pays to other labels that do not have [REDACTED]. More particularly, the [REDACTED] contracts with record labels that Dr. Eisenach reviewed show the same [REDACTED], a rate no lower than the rate paid by other interactive streaming services. 4/4/17 Tr. 473953 (Eisenach); *see also, e.g.,* Trial Ex. 2760 (Digital

[100] If the sound recording royalty rate for interactive streaming is 60%, as discussed infra, this YouTube benchmark equals [REDACTED] × 0.60 = [REDACTED]%.

[101] Pandora's status as a purely noninteractive service prior to 2018 does not decrease the relevancy of this benchmark, because: (1) Noninteractive and interactive services both pay performance royalties; (2) noninteractive services historically have not paid mechanical royalties; and (3) the performance license and the mechanical license are perfect complements.

Product Agreement Specific Terms between [REDACTED] and [REDACTED], 2013, [REDACTED]0005221); Trial Ex. 2765 (Digital Audio Distribution Agreement between [REDACTED] and [REDACTED], July 1, 2013, [REDACTED]0005548). Further, for every dollar in royalties a label [REDACTED], the label would [REDACTED].

With regard to the specific omission of data from Spotify's ad-supported service, Copyright Owners make additional arguments. They claim that the ad-supported service does not reflect the actual value of the sound recordings, because that service acts as a funnel to draw listeners to the subscription service. Therefore, Copyright Owners maintain, the ad-supported service is essentially a loss-leader, with the difference between the higher effective per play rates for subscription services and the lower effective per play rates for ad-supported services more in the nature of a marketing expense that should not be deducted from Dr. Eisenach's royalty calculations. *See* Eisenach WDT ¶ 148, n.127.

That analysis, however, omits the fact that Spotify's ad-supported service only [REDACTED]. *See* Marx WDT ¶ 55, n.77. [REDACTED]. These listeners and the advertising revenue they generate are real and reflect the WTP of a large swath of interactive listeners.[102] *See* Marx WRT ¶ 115–16 (''[O]ne aspect of the ad-supported service is to provide an on-ramp to paid services, it also has another important aspect, namely to serve low WTP customers. . . .''). Copyright Owners' economists err in not calculating the impact of Copyright Owners' proposal on ad-supported services. Ad-supported services currently make up [REDACTED] and [REDACTED]% of all streams in the industry. The Judges agree with Professor Marx that Dr. Eisenach's omission of the Spotify data undercuts his analysis.[103]

The Judges accept, to some degree, Copyright Owners' argument that ad-supported services are a marketing tool to identify future subscribers. Until those subscribers are identified and ''signed,'' however, they are not subscribers. In that sense, ad-supported services may be marketing tools, but they do not reduce present royalties because the future subscribers have not yet been identified. There is no record evidence that Spotify's hard cost saving translates directly into royalty revenue lost to Copyright Owners. Apparently, Copyright Owners argue that their loss is in the form of an opportunity cost, *i.e.,* losing the opportunity to obtain subscription-level royalties from the ad-supported listeners. But if Spotify paid subscription-level royalties for all ad-supported listeners, it would be paying an implicit marketing cost that inefficiently was allocated to the [REDACTED]% or so ad-supported listeners who, historically, will not become paid subscribers.

The use of an ad-supported service as a ''freemium'' model serves a dual purpose: First, it is an efficient means of marketing—segregating listeners according to WTP—still allowing them to ''experience'' interactive streaming, while, second, simultaneously providing ad-revenue-based royalties to Copyright Owners. If Spotify substituted advertising as a marketing tool, Copyright Owners would realize zero royalties until the advertising resulted in new subscribers.[104]

d. Analysis of Dr. Eisenach's Method #1

The Services criticize Dr. Eisenach's Method #1 calculation as being based upon the incorrect assumption that the entire difference between interactive and noninteractive rates must be attributed to the mechanical license right. As the Services properly note, there are several reasons, all unrelated to the mechanical right and license, why interactive rates are higher than noninteractive rates for musical works performance rights. Leonard WRT ¶ 55; Katz CWRT ¶¶ 117–118; Hubbard CWRT ¶ 6.4; 4/5/17 Tr. 4972–74 (Katz). Dr. Eisenach's Method #1 did not account for the presence of the ephemeral right in licensing noninteractive streaming, which accounts for 5% of the noninteractive rate. *See* 4/4/17 Tr. 485152 (Eisenach); 4/5/17 Tr. 5158–61 (Leonard); *see also* Leonard WRT ¶¶ 55–56.

Further, there is a difference in the performance rights royalty rates PROs charge interactive and noninteractive services that is not captured by Method #1. *See, e.g., In re Petition of Pandora Media, Inc.,* 6 F. Supp. 3d at 330. Had Dr. Eisenach considered other explanations for the difference between the All-In sound recording royalty rates for interactive and noninteractive services, he might well have estimated a mechanical rate ''[REDACTED]'' *See* Katz CWRT ¶ 122.

The Services also note the impact in Method #1 of Dr. Eisenach's decision to omit [REDACTED] data from his modeling. The Services contend adding the [REDACTED] data to Dr. Eisenach's effective per play rate for sound recording results in a per-play rate of $[REDACTED]. *See* 4/4/17 Tr. 4771–74 (Eisenach).

Combining the foregoing criticisms, the Services conclude:

> If one were to use $[REDACTED] per hundred plays for the sound recording rate (which includes the [REDACTED] data) (*id.* at 4771–74), reduce that by 12% as the Board did in *Web IV* for complementary oligopoly power, increase the $[REDACTED] per hundred plays Dr. Eisenach uses for musical works performance rights by 60% to account for the difference in ASCAP rates identified by Judge Cote, and then apply Dr. Eisenach's invalid ''valuation ratio'' of [REDACTED]:1, the result would be $[REDACTED] per hundred plays ($[REDACTED] per play), way below the $0.15 per hundred plays rate ($.0015 per play) that Dr. Eisenach attempts to validate.

SJPFF ¶ 279 (and record citations therein).

The Judges agree with the Services that Eisenach's Method #1 does not provide a useful benchmark in this proceeding. The absence of interactive streaming data from [REDACTED] is a critical omission. The fact that much of that data relates to [REDACTED] services [REDACTED] does not justify removing the data from a market analysis; that service is a part of the market. In fact, Copyright Owners' argument proves too much. That is, their willingness to distinguish and isolate the [REDACTED] service and related data actually underscores the need for a differentiated/price discriminatory rate structure, such as the Judges have adopted in this proceeding.

The Judges are less sanguine, however, with regard to the Services' argument for a 12% reduction to the sound recording rates to reflect the complementary oligopoly effect arising

[102] In the parlance of platform economics, Spotify's ad-supported service provides a multi-platform approach, in which listeners, advertisers, sound recording rights holders and musical works holders all combine to obtain revenue based on the mutual values each brings to that platform.

[103] Copyright Owners belatedly propose that if the Judges intend to include the Spotify ad-supported service in the rate structure and rate calculations, they should establish (1) separate rates for ad-supported services that are not incorporated into the calculation of rates set for other services; and (2) separate terms for an ad-supported service that limit the functionality of the service, to avoid potential cannibalization of services paying higher royalties. COPCL at 106, n.34. This argument is a tacit acknowledgement by Copyright Owners that a segmented market might require a differentiated rate structure, even as they strenuously dispute the appropriateness of such a structure.

[104] The provision of a monetarily free-to-the user service is a reasonable marketing tool, and the Judges are loathe to second-guess the business model incorporating that marketing approach, especially while it provides royalties to rights owners. Also, the Judges do not find it relevant that other interactive streaming services have not utilized an ad-supported service. There is no record evidence regarding why other Services have ceded that market to Spotify.

from the ''must have'' status of the sound recordings in the interactive streaming distribution channel. The Judges are reluctant to simply import the 12% rate reduction from *Web IV* into other determinations, even though that figure was used to adjust from interactive streaming rates to noninteractive streaming rates. The specific 12% figure was based on record evidence derived from steering experiments and agreements analyzed in *Web IV.*

The Judges agree with the Services that it is inaccurate in Method #1 to subtract a performance rate that reflects the higher interactive performance rate, rather than the lower noninteractive performance rate.

e. Analysis of Dr. Eisenach's Method #2

The Judges find that Dr. Eisenach's Method #2 does not contain sufficient industrywide performance royalty and sound recording data to provide a meaningful analysis for determining a per-user monthly mechanical works royalty. The Judges are also troubled by the apparent inconsistent use of Rate Court established rates in Method #2, when Dr. Eisenach had indicated in other contexts that rates unshackled from Rate Court decisions provide a truer indication of market rates.

The Judges understand that Dr. Eisenach omitted [REDACTED] user data because of [REDACTED], which is itself a function of its [REDACTED] service. The Judges recognize that combining [REDACTED] user data with other interactive streaming services' data would significantly change the results, in a manner that Copyright Owners find to be anomalous. *See* CORPFF at 183–184 (noting what Copyright Owners describe as ''[t]he profound impropriety of ''blending'' [REDACTED] rate into Copyright Owners' benchmarking and calculations.) However, that seeming anomaly actually underscores why the Judges find a differentiated rate structure to be appropriate.

The royalty rates paid by all Services should be reflective of the differentiated WTP of listeners.

f. Conclusion

For the foregoing reasons, the Judges do not adopt Dr. Eisenach's proposed benchmark rates as the mechanical rates for the upcoming rate period. However, the Judges do find several of the benchmark rates implied by his sound recording to musical works ratios to be useful guideposts for identifying the headline percent-of-revenue rate to be incorporated into the rate structure in the forthcoming rate period.

*B. Rejection of Services' 2012-Based Proposals*

1. Section 115 Benchmark Rates

The Services do not examine in detail the particular rates within the existing rate structure. Rather, they treat the rates within that structure as benchmarks, *i.e.,* generally indicative of a sufficiently analogous market [105] that has ''baked-in'' relevant economic considerations in arriving at an agreement. Dr. Eisenach did not analyze *why* he chose the levels for the rates and ratios on which he relied as benchmarks or consider the subjective understandings of the parties who negotiated his benchmarks. Similarly, the Services' economists elected to rely on the 2012 rates as objectively useful without further inspection.[106]

Copyright Owners take the Services to task for failing to present evidence of the negotiations that led to the prior settlements. They argue that, without relevant evidence or testimony, the Services cannot provide support for their proposed rates. The Services take a very broad approach in their attempt to establish the usefulness of the rate levels within the 2012 benchmark. They note that music publishers have consistently realized profits under these rates, including profits from musical works royalties. Copyright Owners counter that mechanical royalties have not created a profit for Copyright Owners, and the Services' assertion of overall publisher profitability is based on their lumping of performance royalties together with mechanical royalties.

The Services maintain that they relied on the continuation of the existing rates in developing their business models. For example, Pandora, the latest entrant into the interactive streaming market, asserts that it based its decision to enter this market on its assumption that mechanical royalty rates would not increase. Herring WRT ¶ 3.

The Judges categorically reject this argument. The statute is plain in its requirement that the rates be established *de novo* each rate period. A party might feel confident that past is prologue and that the parties will agree to roll over the extant rates for another period. A party could be sanguine as to its ability to make persuasive arguments to keep the rates unchanged. A party might conclude that the mechanical rate is such a small proportion of a licensee's total royalty obligation that its increase would be unlikely to alter long-term business plans. But for sophisticated commercial entities to claim that they assumed the rates would remain static is incredible.

The record indicates that an increase in the rates might affect different interactive streaming services in different ways. In particular, there might be a dichotomous effect as between essentially pure play streaming services (such as Spotify and Pandora) and the larger new entrants with a wider commercial ''ecosystem'' (such as Amazon, Apple and Google). As Spotify's CFO testified:

> The Copyright Owners argue that ''a change in market-wide royalty rates such as this would affect all participants in a similar way,'' suggesting that the industry as a whole could increase prices without affecting their relative price points. Rysman WDT ¶ 94. *However, not all Digital Services use the same business model.* For example, several Digital Services are owned by large corporate parents who can use streaming music as a ''loss leader'' to build brand awareness, keep users in their broader ecosystem, or promote other products and/or services. *See, e.g.,* Rysman WDT ¶ 29 . . . . The industry has already seen a few examples of *downward* pressure on prices from this strategy. *See* WDT ¶ 50. [REDACTED] *See* WDT ¶ 73.

McCarthy WRT ¶ 38; *see* Written Direct Testimony of Barry McCarthy, Trial Ex. 1060, ¶ 50–51 (McCarthy WDT) ([REDACTED]); McCarthy WRT ¶ 36 ([REDACTED]).[107]

[105] Here, the ''analogous market'' is the same as the target market across all dimensions, except that the benchmark is temporally removed from the target, with the rates in the benchmark having been formed five years ago.

[106] This point is not made to be critical of Dr. Eisenach's approach, but rather to show that the Services' reliance on the 2012 settlement as a benchmark shares this similar analytical characteristic, typical and appropriate for the benchmarking method. (The factual wrinkle here is that, hypothetically, the Services could have called witnesses and presented testimony regarding the negotiations that led to the 2012 (and 2008) settlements, but did not, rendering the 2012 benchmark similar to other benchmarks taken from other markets. Mr. Israelite provided some testimony on behalf of Copyright Owners regarding those negotiations (as discussed *supra*), but even that testimony related to the rate *structur*e, rather than to the *level* of the rates themselves.

[107] As noted elsewhere, the Judges find it highly informative that the Services agree to a continuation of the present rates even though: (1) They are all losing money under these rates; and (2) their experts suggest much lower rates than the Services propose. While the assertions of ''conservatism'' and reasonableness'' suggest strategic prudence, the Services' acquiescence to these rates indicates that year-over-year accounting losses are not of great concern—certainly not great enough for the Services to rely on their own experts' opinions to advocate for lower rates. Rather, they seem to be locked in a battle for market share, in which the single survivor, or the several survivors serving discrete downstream segments, can acquire the market power sufficient to appropriate a sufficient share of the surplus, as explained in the discussion of the Shapley value. That is, the interactive streaming services seemed to be in a Schumpeterian competition *for the market,* not merely in competition *in the market.* Given this finding, the Judges do not find that the year-over-year losses

The Judges construe this argument as an iteration of the ''business model'' argument that they have consistently rejected. The Judges cannot and will not set rates to protect any particular streaming service business model. The Judges distinguish between: (1) Business models that are necessary reflections of the fundamental nature of market demand, particularly, the varied WTP among listeners; and (2) business models that may simply be unable to meet dynamic competition. If pure play interactive streaming services are unable to match the pricing power of businesses imbued with the self-financing power of a large commercial ecosystem, nothing in section 801(b)(1) permits, let alone requires, the Judges to protect those pure play interactive streaming services from the forces of *horizontal* competition. Moreover, any disruption arising from the disparate impact of a rate increase among interactive streaming services would not constitute ''disruption'' under Factor D. Disruption resulting from competition would not upend the structure of the industry or generally prevailing industry practices; rather it would influence particular business models.

2. The Services' Subpart A Benchmark

The Services utilize the rate in extant subpart A as an additional benchmark for the subpart B rates to be determined in this proceeding. Subpart A describes the rates record companies pay Copyright Owners for the mechanical license, *i.e.,* the right to reproduce musical works in digital or physical formats. The particular subpart A benchmark rate on which the Services' rely is the existing rate, which the subpart A participants have agreed to continue through the forthcoming rate period through settlement.[108]

In support of this benchmark, the Services emphasize that the total revenue created by the sale of digital phonorecord downloads and CDs is essentially commensurate with the revenues created through interactive streaming, indicative of an equivalent financial importance to publishers when negotiating rates with licensees in subparts A and B respectively. *See* 3/20/17 Tr. 1845 (Marx) (''downloads, in particular, are comparable to interactive streaming.''). Also, although the subpart A rate is the product of a settlement, the Services argue that the rate is a useful benchmark because it reflects both the industry's sense of the market rate and the industry's sense of how the Judges would apply the section 801(b)(1) considerations to those market rates. 3/15/17 Tr. 1184, 1186 (Leonard); 3/20/17 Tr. 1842–43 (Marx).

In opposition, Copyright Owners argue, for several reasons, that the subpart A rates are not proper benchmarks. First, they emphasize that revenue from the sale of PDDs and CDs has been declining over the past several years. Second, they note, as the Services acknowledge, that the parties are not identical; specifically, the licensees in subpart A are record companies whereas in subpart B the licensees are interactive streaming services. *See, e.g.,* 3/15/17 Tr. 1193 (Leonard). Third, Copyright Owners emphasize that the existing subpart A rate is itself the product of a settlement, rather than a market rate. Fourth, and relatedly, they raise their overarching argument against any purported benchmark rate set in ''the shadow'' of the statutory license, because the licensee record companies had the option of refusing to settle and to seek instead a potentially lower statutory rate.

Copyright Owners note that the subpart A settlement establishes a per-unit royalty rate of $0.091 per physical or digital download delivery (with higher per-unit rates for longer songs), rendering that rate inapposite as a benchmark for the Services' present subpart B proposal. *See* 3/20/17 Tr. 1960 (Marx). In support of this position, Copyright Owners argue that because the subpart A rate is expressed as a monetary unit price, Copyright Owners have eliminated the risk that retailers' downstream pricing decisions will affect the Copyright Owners. More specifically, they note that, ''[u]nder the subpart A rate structure, the [record company] (as licensee) pays the same [penny rate] amount in mechanical royalties regardless of the price at which the sound recording is ultimately sold [within the] range of price points for individual tracks in the market ranging from $0.49 to $1.29 and the mechanical penny rate binds regardless of the price of the track. COPFF ¶ 727 (citing Ramaprasad WDT ¶ 28 & Table 1; 3/20/17 Tr. 1956–58 (Marx)).

Copyright Owners further attempt to distinguish subpart A from subpart B based on the fact that downstream listeners to PDDs and CDs (and any other physical embodiment of a sound recording) become *owners* of the sound recording and the musical work embodied within it, whereas under subpart B the listeners only obtain *access* to the musical works for as long as they remain subscribers or registered listeners (to a non-subscription service). The Judges find this point to be a distinction without a sufficient economic difference. The Judges note with favor the testimony of Professor Leonard, who said of the ''ownership vs. access'' distinction that, although it is a real legal distinction, it does not reflect as fundamental an economic difference as might appear on the surface. Leonard WRT ¶ 27; 3/15/17 Tr. 1098, 1113 (Leonard).

The Judges accept Professor Leonard's economic analogy. Ownership is in essence a more comprehensive and unconditional form of access. A downstream purchaser acquires ownership of the digital or physical reproduction of a sound recording and the embodied musical work for an up-front charge (the purchase price). The purchaser then has unlimited free access to that sound recording/musical work going forward. A subscriber to an interactive streaming service pays an up-front charge (usually monthly), and then likewise has unlimited access to the entire catalog of sound recordings (and the embodied musical works) for each paid period.

In economic terms, each approach contains the features of a ''two-part tariff,'' where the end user pays a fixed access fee (an ''option'' price, *i.e.,* the right to use the owned or accessible music) and a zero marginal per play charge that efficiently corresponds with the zero physical marginal cost of creating another play of the owned or accessible sound recording/musical work.[109] The salient difference is that the subscriber does not get unlimited marginal plays for zero additional charge. The monthly subscription fee is the measure of the marginal cost to the

suffered by the Services constitute a serious competitive detriment. Accordingly, in setting effectively competitive rates, the Judges are more concerned with providing the Copyright Owners with a rate that appropriately compensates them in a manner consistent with the relevant and persuasive benchmarks, even if the Services may incur a somewhat higher level of accounting losses. Alternately stated, the Judges find that it would be highly coincidental (and is unsupported by any evidence) that the present rate levels establish in essence a maximum level of losses the Services collectively can sustain, such that a reduction in losses is unnecessary but an increase in losses will lead to their demise.

[108] The Services did not rely on the settlement that led to the continuation of these rates into the next rate period as a benchmark. The Services moved for discovery regarding this most recent settlement but the Judges denied that motion on the grounds that the new settlement was not a benchmark on which the Copyright Owners had relied and therefore was not within the scope of allowable discovery. *See* 37 CFR 351.5 (scope of discovery limited to materials relevant to the responding party's Written Direct Statement). The Copyright Owners did not proffer any evidence regarding their most recent settlement.

[109] This point is more general in nature. Any item that is ''owned'' creates value in use because it is *capable* of being accessed, not that it is *continuously* accessed.

listener who streams. Determination of the allocation of that marginal cost is impossible, however, as the Judges recognize that the subscription fee allows for access to a large, comprehensive repertoire, whereas access stemming from the purchase of a download, CD, or vinyl record is limited to the specific sound recording and embodied musical work. For this reason, there is less access value in the sale of a download or a CD, compared to the access value of a subscription to a streaming service, rendering the subpart A rate at best a guideline as to the rates below which the subpart B and C rates cannot fall.[110]

In other respects, the Judges find the subpart A settlement to be somewhat useful. The licensed right in question is identical: The right to reproduce musical works for sale into a downstream market. Further, the licensors, *i.e.,* the music publishers and songwriters, are identical. Finally, the time period is reasonably recent and Copyright Owners have not explained whether or how the particular market forces in the subpart A market sectors have changed since 2012 to make the rate obsolete. The usefulness of the subpart A rate as a benchmark is limited, however, because: (1) The access value of downstream services is greater than the access value of an individual purchase of a sound recording/musical work; (2) there is a partial difference in economic risk to the licensors between a per-unit royalty and a royalty based on a percent-of-revenue (with minima); and (3) the licensees in the benchmark market are not the same.

3. The Two Subpart A Benchmarking Approaches

In their first benchmarking exercise, the Services attempt to convert the per-unit rate in subpart A into a subpart B percent-of-revenue rate. To that end, they attempt to identify an equivalency between a given number of interactive streams and a single play of a purchased DPD.

Professor Marx first applies a conversion ratio of PDDs to streams of 1:150, calculated by the RIAA. Second, she takes note of an academic study which estimated that marketplace 137 interactive streams was equivalent to the sale of one DPD. Marx WDT ¶ 108 & n.21 (citing L. Aguiar and J. Waldfogel, *Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales?,* (working paper, National Bureau of Economic Research, 2015)); Katz WDT ¶ 110 (same). Apple's economic expert, Professor Ramaprasad, also relied on the Aguiar/Waldfogel article to support Apple's benchmark per play proposal. Ramaprasad WDT ¶ 56, n.102.[111]

Professor Marx applied this approach and formula to Spotify's revenues. She calculated that, given the number of songs played on Spotify that were longer than five minutes, the per-recording rate in subpart A is $[REDACTED]. Dividing that per recording rate by 137 yields $[REDACTED] royalty per stream. She then multiplied that per stream ''equivalent'' royalty by the total number of streams to estimate a total royalty. Professor Marx then divided the total royalty by total revenues. Given the All-In approach proposed by the Services, Professor Marx subtracted Spotify's performance royalty rate of [REDACTED]% of revenue to determine a mechanical royalty rate of [REDACTED]% of revenue using this approach. Marx WDT ¶ 112, Fig. 22. When she applied the Aguiar/Waldfogel 137:1 ratio, she identified a musical works All-In royalty rate derived from subpart A of [REDACTED]% of revenue, and a mechanical royalty rate (*i.e.,* after subtracting the [REDACTED]% performance rate) of [REDACTED]% of revenue.

On behalf of Pandora, Professor Katz used the same 1:150 conversion ratio as Professor Marx. He calculated a mechanical rate implied by the subpart A rate of [REDACTED]% of revenue, higher than Professor Marx's implied rate, but still lower than the existing headline rate of 10.5% in subpart B. Katz WDT ¶ 111.

On behalf of Apple, Professor Ramaprasad utilized the same 1:150 ratio, which she adopted from Billboard magazine's ''Stream Equivalent Albums'' analysis. Ramaprasad WDT ¶ 84. Because Apple has advocated for a per-stream rate, her conversion was expressed on a per-stream basis, at $0.00061 per stream. Professor Ramaprasad noted that this rate was not only lower than the $0.0015 per stream rate proposed by Copyright Owners, but also significantly lower than Apple's own proposed per-stream rate of $0.00091. Ramaprasad WDT ¶ 86. When Professor Ramaprasad applied the Waldfogel/Aguiar 1:137 ratio, expressed on a per-play basis, she calculated a rate of $0.00066 per stream for interactive streaming, which she noted was even lower than the per-stream rate of $0.00091 Apple had proposed.

The Judges do not base any conclusions on this ''conversion'' approach. Copyright Owners express numerous criticism of the ratio approach, and many of those criticisms, each on its own merit, serve to discredit the ratio approach. First, the Services and Apple simply adopted the equivalence ratios without defining what ''equivalence'' means. For example, the RIAA used the concept to identify albums that were sufficiently popular to garner ''gold'' or ''platinum'' awards. That use, absent other evidence, does not indicate that the conversion ratio is appropriate for rate-setting purposes. *See generally* Rysman WRT ¶ 96; 3/23/17 Tr. 2775–76 (Ramaprasad). Second, and relatedly, the experts who relied on the Aguiar/Waldfogel article did not verify that the input data that was used by the authors was appropriate for the purposes for which it has been relied upon in this proceeding. *See* 3/20/17 Tr. 1945–46 (Marx); 3/23/17 Tr. 2789–90 (Ramaprasad). Third, the Aguiar/Waldfogel article appears not to specifically address two issues that would make the equivalency ratio meaningful: (a) What happens to the download behavior of an individual who adopts streaming; and (b) how the availability of streaming alters the consumption of a particular song. *See* Rysman WRT ¶ 97. Fourth, the experts for the Services and Apple ignore that Aguiar and Waldfogel conducted an additional analysis described in the same article on which they rely. In that second analysis, the authors compared the weekly data from Spotify for the period April to December 2013 with weekly data from Nielson on digital download sales for the same songs during the same overlapping time period. That approach, which Aguiar and Waldfogel called their ''matched aggregate sales'' analysis, yielded a ratio of 43:1, implying a much higher

[110] The Judges note though that Copyright Owners' appropriate reliance on the different access value in subpart A is an argument relating to the downstream value, confirming that upstream value demand is a ''derived demand,'' based on values in the downstream market. This argument therefore further undercuts Copyright Owners' claim that there is an ''inherent value'' in musical works that applies in these proceedings.

[111] Professor Ramaprasad also relied on two other equivalency ratios, the first from *Billboard* magazine, and the second from another entity, UK Charts Company (UK Charts). However, she acknowledges that the *Billboard* ratio combines *video* streaming royalty data with *audio* streaming royalty data, which results in an overestimation of the ratio of streams to track sales relative to an audio-stream-only analysis. 3/26/17 Tr. 2760–61 (Ramaprasad). She also acknowledges that UK Charts changed its ratio from 100:1 to 150:1 without explanation, rendering uncertain that purported industry standard. *See* COPFF ¶ 683 (and record citations therein). Also, there was no evidence indicating that streaming and download activity in the United Kingdom would be comparable to U.S. activity.

mechanical rate for streaming. *See* COPFF ¶¶ 663–64 (and record citations therein).

The Services and Apple offer insufficient evidence to overcome these criticisms of their ''equivalence'' approach to applying the subpart A rates in this proceeding. Accordingly, the Judges do not rely on these ''equivalence'' approaches in this determination.

By contrast, the Services' *second* subpart A benchmarking approach, utilized by both Professor Marx and Dr. Leonard, is more straightforward; it does not require a conversion of downloads into stream-equivalents. Rather, under this approach, Professor Marx simply divides the effective per-unit download royalty of $.096 by the average retail price of a download, $1.10, to calculate an All-In musical works royalty percent of [REDACTED]%. Subtracting Spotify's [REDACTED]% performance rate nets a mechanical works rate of [REDACTED]. In similar fashion, given an average CD price of $1.24 per song, she finds that the All-In musical works rate equals [REDACTED]%. Subtracting Spotify's [REDACTED]% performance rate nets an ''effective'' mechanical royalty rate of [REDACTED]% under this approach. Thus, she concludes that the Services' proposal in general, and Spotify's proposal in particular, are conservative and reasonable, because those proposals provide for substantially higher royalty rates than suggested by this subpart A benchmark analysis. Marx WDT ¶¶ 113–114 & Fig. 23.

Dr. Leonard did a similar calculation. He found that, applying the subpart A rates expressed as a percentage of revenue, interactive streaming services would pay an All-In rate to Copyright Owners of 8.7% of revenue, based on the average retail price of digital downloads in 2015. Leonard AWDT ¶ 42. Dr. Leonard further calculated that, expressed as a percentage of payments to the record labels (rather than total downstream revenues) the subpart A settlement reflects a payment of 14.2% of sound recording royalties, when compared to payments to record labels in 2015. Leonard AWDT ¶ 46.

Using updated 2016 data, which lowered the DPD retail price to $.99, Dr. Leonard calculated an ''effective'' percentage royalty rate of 9.6%. 3/15/17 Tr. 1108–09 (Leonard). Dr. Leonard then adjusted this result to make it comparable to Google's proposal, which seeks a reduction of up to 15% of certain costs incurred to acquire revenues. Adjusting for this cost reduction, Dr. Leonard concludes that the equivalent percent of revenue (after deducting similar costs) in subpart A was 10.2% in 2015 and 11.3% in 2016. *Id.* at 1109.

Copyright Owners do not dispute the calculations made by Professor Marx and Dr. Leonard. However, their general criticisms of the overall concept of using subpart A as a benchmark, discussed and rejected below, are equally applicable to this second approach.

The Judges find that the subpart A benchmark determined by this second approach is useful—not to establish the appropriate benchmark—but to incorporate into the development of a zone of reasonableness of royalty rates within the rate structure adopted by the Judges in this proceeding. The subpart A rates satisfy important criteria for a useful benchmark: The licensors are the same in the benchmark and target market; the rights licensed are the same in both markets; the time period of the rates in both markets is proximate; and the amount of revenue realized by the licensors in both markets is comparable. Additionally, the second approach is straightforward—simply converting a per unit price into a percent of revenue. Finally, the Judges take note of a point made by Professor Marx: Copyright Owners, like any seller/licensor, would rationally seek to equalize the rate of return from each distribution channel, *i.e.,* from licensing rights to sell DPDs/CDs under subpart A and from licensing interactive streaming services under subpart B. As she explains:

> This principle of equalizing rates of return across different platforms has some similarities with that underlying the approach of W. Baumol and G. Sidak, ''The Pricing of Inputs Sold to Competitors,'' . . . . They propose an efficient component pricing rule whose purpose is to ensure that the bottleneck owner (in our case, the copyright holder) should get compensation for access from all downstream market participants, whether existing or new entrants, that leaves him as well off as he would have been absent entry.

Marx WDT ¶ 104, n.118.

The Judges first identified this principle in *Web IV,* through a colloquy with an economic witness, and it remains persuasive in this proceeding. *See Web IV,* 81 FR at 26344 (Economic expert, Professor Daniel Rubinfeld, acknowledging as ''a fundamental economic process of profit maximization . . . [licensors] 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.''). Further, the Judges only recently credited this ''efficient component pricing rule''/opportunity cost approach in *SDARS III.*[112]

*C. Rejection of Apple's Proposed Rate*

Apple proposes an All-In per-unit rate of $0.00091 per play. However, that rate is premised on two analytical factors that the Judges have rejected in this proceeding. First, as a single, per-play rate, Apple's proposal fails to reflect the variable WTP in the market, rendering it a less efficient upstream royalty rate. Second, Apple's proposed $0.00091 per-play rate is derived from the subpart A conversion ratio approach that the Judges rejected in this proceeding.

*D. Deriving Royalty Rates From Shapley Analyses*

The Judges look to the Shapley analyses [113] utilized by the Professors Marx and Watt and, to a lesser extent, the ''Shapley-inspired'' analysis utilized by Professor Gans, as one means of deriving a reasonable royalty rate (or range of reasonable royalty rates).[114] The Judges defined and described the Shapley value in a prior distribution proceeding: ''[T]he Shapley value gives each player his 'average marginal contribution to the players that precede him,' where averages are taken with respect to all potential orders of the players.'' *Distribution of 1998 and 1999 Cable Royalty Funds,* 80 FR 13423, 13429 (Docket No. 2008–1) (March 13, 2015) (citing U. Rothblum, *Combinatorial Representations of the Shapley Value Based on Average Relative Payoffs,* in *The Shapley Value: Essays in Honor of Lloyd S. Shapley* 121 (A. Roth ed. 1988)); *see* Expert Report of Joshua Gans, Trial Ex. 3028, ¶ 64 (Gans WDT) (''The Shapley value approach . . . models bargaining processes in a free market by considering all the ways each party to a bargain would add value by agreeing to the bargain and then assigns to each party their average contribution to the cooperative bargain.''); Marx WDT ¶ 144 (''The idea of the Shapley value is that each party should pay according to its average contribution to cost or be paid according

[112] Of course, because copies of musical works (embodied in copies of sound recordings) are non-rivalrous quasi-public goods, licensing a copy to licensees in one platform does not prevent the licensing of another copy to licensees on a different platform. The equalization of returns for such goods relates to the elimination of opportunity costs.

[113] The ''Shapley Analysis'' or ''Shapley Models'' are so called based on the work of Nobel Economics Prize winner, Dr. Lloyd S. Shapley.

[114] The Judges will revisit the Shapley Analyses in evaluating factors B and C under section 801(b)(1).

to its average contribution to value. It embodies a notion of fairness.''); Written Rebuttal Testimony of Richard Watt, Trial Ex. 3034, ¶ 23 (Watt WRT) (''The Shapley model is a game theory model that is ultimately designed to model the outcome in a hypothetical 'fair' market environment. It is closely aligned to bargaining models, when all bargainers are on an equal footing in the process.'').

1. Shapley Models

A Shapley Analysis requires the economic modeler to identify downstream revenues available for division among the parties. The economic modeler must also input costs that each provider must recover out of downstream revenues, in order to identify the residue, *i.e.,* the Shapley ''surplus,'' available for division among the parties. A Shapley Model is cost-based, similar to a public utility-style rate-setting process, which identifies a utility's costs to be recovered before determining an appropriate rate of return.[115] In the present case, Copyright Owners and the Services have applied this general approach in different ways, and each challenges the appropriateness of the other's model.

To summarize the differences in their approaches, Professor Marx utilizes a Shapley Model that purposely alters the actual market structure in order to obtain results that *intentionally deviate* from the market-based distribution of profits. She makes these alterations in her model to determine rates she identifies as reflecting a ''fair'' division of the surplus (Factor B) and recompense for the parties' relative roles (Factor C). By contrast, Professor Watt's ''correction'' of Professor Marx's model rejects her alteration of the market structure. Rather, he maintains that the incorporation of ''all potential orders of the players'' in her model (as in all Shapley Models) already eliminates the hold-out power of any input provider who might threaten to walk away from a transaction.

Professor Gans, like Professor Watt, does not attempt to alter the market structure. However, Professor Gans concedes that he is not attempting to derive Shapley values from a ground–up analysis. Rather, Professor Gans takes as a given Dr. Eisenach's estimation that record companies receive a royalty of $[REDACTED] per play from interactive streaming services. Since Professor Gans identifies musical works and sound recordings as perfect complements, he assumes that the musical works licensors would receive the same profit as the record companies (but not the same royalty rate, given their different costs). Because this is not a Shapley ground-up approach, which would require estimating the input costs of *all three input providers*—the record companies, the music publishers, and the interactive streaming services, Professor Gans candidly acknowledged on cross-examination that he did not perform a full-fledged Shapley Analysis. He describes his methodology as a ''Shapley-inspired'' approach. 3/30/17 Tr. 4109 (Gans).

a. Professor Marx's Shapley Analysis

Professor Marx testified that, as an initial matter ''[t]he Shapley value depends upon how [the modeler] delineate[s] the entities contributing to a particular outcome.'' Marx WDT ¶ 145. More particularly, Professor Marx delineated the entities in a manner that she claimed to ''adjust[ ] the model for monopoly power.'' 3/20/17 Tr. 1862–63 (Marx). She modeled the downstream interactive streaming services as a combined single service and added to her model other distribution types as another form of downstream distribution to account for the potential opportunity cost of interactive streaming. By modeling the downstream market in this manner, Professor Marx artificially, but intentionally, treated the Services as a *single* service, a device to countervail the allegedly real market power of the collectives (the music publishers and the record companies respectively) that owned the other inputs. Professor Marx concluded the publishers' and record companies' must be offset to establish a fair division of the surplus and a fair rate. *See* 3/20/17 Tr. 1865, 1907 (Marx).

With regard to the upstream market of copyright holders, Professor Marx utilized two separate approaches. In her self-described ''baseline'' approach, she ''treat[ed] rights holders as one upstream entity, reflecting the broad overlap in ownership between publishers and record labels.'' Marx WDT ¶¶ 146, 162. In her ''alternative'' approach, she uncoupled the two collectivized copyright holders, grouping the songwriters/publishers, on the one hand, and the recording artists/record companies, on the other. *Id.* The two purposes of her alternative approach were: (1) To separately allocate surplus and indicate rates for musical works (the subject of this proceeding); and (2) to illuminate the additional ''bargaining power'' of each category of copyright holder when these two categories of necessary complements arrive separately in the input market under the Shapley methodology. 3/20/17 Tr. 1883–84 (Marx).

i. Professor Marx's Baseline Approach

Professor Marx noted the undisputed principle that ''[t]he calculation of the Shapley value depends on the total value created by all the entities together and the values created by each possible subset of entities.'' Marx WDT ¶ 147. Equally undisputed is the understanding that ''[t]hese values are functions of the associated revenue and costs.'' *Id.*

The surplus to be divided (from which rates can be derived) is realized at the downstream end of the distribution chain when revenues are received from retail consumers. That surplus can be measured as the profits of the downstream streaming services (and the alternative services in her model), *i.e.,* their ''revenue minus . . . non-content costs.'' [116] The total combined value created by the delivery of the sound recordings through the interactive (and substitutional) streaming services consists of: (1) The aforementioned profits downstream (*i.e.,* service revenue − non-content cost) *minus* (2) ''the copyright owners' non-content costs. Simply put, ''surplus'' reflects the amount of retail revenue that the input providers can split among themselves after their non-content costs (*i.e.,* the costs they do not simply pay to each other) have been recovered.

In her Shapley Analysis, Professor Marx relied on 2015 data from Warner/Chappell for her music publisher non-content cost data and its ownership-affiliated record company, Warner Music Group, for record company non-content costs.[117] Utilizing the Warner cost data and extrapolating to the entire industry, Professor Marx estimated that ''Musical Work Copyright Holders' Total Non-Content Costs'' equaled $424 million; and ''Sound Recording Copyright Holders' Total non-content

[115] Unlike in public utility regulation, the Shapley Analysis considers the costs of all input providers whose returns will be determined. In traditional public utility rate regulation, the utility is a monopoly and thus the only provider of a regulated input.

[116] Content costs, as opposed to non-content costs, are not deducted because the content costs comprise the surplus to be allocated in terms of royalties paid and residual (if any) that remains with the interactive streaming (and substitute) services. The non-content costs, as discussed *infra,* must be recovered by each input provider as part of its Shapley value, because entities must recover costs to the extent their share of revenues allows such recovery.

[117] Professor Marx was limited to the Warner data for non-content costs because, among all major holders of musical works and sound recording copyrights, ''only Warner . . . breaks down its cost by geographic region and by source in enough detail to estimate the amounts needed.'' Marx WDT ¶¶ 149–150.

costs equaled $2.605 billion (more than six times musical works' copyright holders' non-content costs). Total licensors' upstream non-content costs totaled $3.028 billion. *Id.* ¶ 150, Fig. 26.

Turning to the downstream distribution outlets, Professor Marx identified and relied on Spotify's 2015 revenue and cost data from for interactive streaming services; for the alternative distribution modes, she relied on Pandora's and Sirius XM's revenue and cost data. *Id.* ¶ 152 & nn.149–52. Using that data, Professor Marx estimated interactive streaming revenue of $[REDACTED] billion; and (2) interactive streaming profit of $[REDACTED]. For the alternative distributors (Pandora and Sirius XM), she estimated (1) revenues of $8.514 billion; and (2) profits of $3.576 billion. The total downstream revenue, according to Professor Marx, equaled an estimated $10.118 billion. *Id.* ¶ 153 & Fig. 27.

Professor Marx noted some degree of substitution between interactive streaming services and alternative distribution channels (*e.g.,* non-interactive internet radio and satellite radio). *Id.* ¶ 154. She opined that ''it is difficult to determine the exact value of this substitution effect,'' so she reported a range of Shapley value calculations that corresponded to ''a range of possible substitution effects.'' *Id.*

These data were inputs into Professor Marx's Shapley algorithm, *i.e.,* assigning value to each input provider for each potential order of arrival among these categories of providers to the market. The multiple values were summed and averaged as required by the Shapley methodology to arrive at the ''Shapley value,'' which accounts for each entity's revenues and (non-content) costs under each possible ordering of market-arrivals.

Based on the foregoing, Professor Marx estimated that the total royalty payment due from the Services to Copyright Owners would range from $[REDACTED] million to $[REDACTED] million, depending on varying assumptions as to the substitution between interactive services and alternate delivery channels. This range of revenues reflected a ''percent of revenue'' paid by interactive streaming services to all copyright holders (musical works and sound recordings) ranging from [REDACTED]% to [REDACTED]%. *Id.* ¶¶ 159–160. Professor Marx then noted that this is well below the combined royalty rate of [REDACTED]% Spotify pays for musical works and sound recording rights, indicating that the actual combined royalty payments are clearly too high. *Id.* ¶ 161.[118]

ii. Professor Marx's Alternative Approach

Professor Marx also performed an ''alternative'' Shapley Analysis in which she modeled the upstream market as *two* entities: ''a representative copyright holder for musical works and a representative copyright holder for sound recordings.'' *Id.* ¶ 163. In all other respects, Professor Marx's methodology was the same as in her baseline approach. *See id.* ¶ 199, App. B.

Under the alternative approach with two owners of collective copyrights upstream, interactive streaming services' total royalty payments range from [REDACTED]% to [REDACTED]% of service revenue. *Id.* Sound recording copyright holders' total royalty income under this alternative approach ranged from [REDACTED]% to [REDACTED]% of revenue. *Id.* Professor Marx explained that this higher range of combined royalties arose from the fact that splitting the copyright holders into two creates two ''must-haves'' providing each upstream entity with more ''market power and consequently higher payoffs than the baseline calculation.'' *Id.* ¶ 164, n.153. By splitting the upstream licensors into two categories (record companies and songwriters/publishers), Professor Marx calculated that ''musical work copyright holders' total royalty income as a percentage of revenue ranges from [REDACTED]% to [REDACTED]%.'' *Id.* ¶ 163. By way of comparison, Spotify actually pays [REDACTED]% of its revenue for musical works royalties (*i.e.,* All-In royalties). Accordingly, Professor Marx concludes that ''[b]ecause this proceeding is about mechanical rates, the fairness component of 801(b) factors suggests that interactive streaming's mechanical rates should be reduced from their current level.'' *Id.* ¶ 161.

iii. Copyright Owners' Criticisms

Copyright Owners criticize Professor Marx's model for ''failing to accurately reflect realities of the market, where current observed market rates for sound recording royalties alone are approximately 60% of service revenue. *See* Watt WRT ¶ 23; Written Rebuttal Testimony of Joshua Gans, Trial Ex. 3035, ¶¶ 19, 28 (Gans WRT); *see also* COPFF ¶ 741. More technically, Copyright Owners object to Professor Marx's joinder of the sound recording and musical works rights holders as a single upstream entity in her ''baseline'' model, claiming that combination had the undisputed effect of lowering Shapley values, and hence royalties, available to be divided between the two categories of rights holders. Gans WRT ¶ 21; Watt WRT App. 3 at 2 (in real world, as opposed to stylized Shapley-world, rights holders would not *jointly* negotiate with licensees); *see also* COPFF ¶ 742. Further, Professor Gans questions Professor Marx's rationale for her joint negotiation assumption, *viz.,* the overlapping ownership interests of record companies and music publishers. Gans WRT ¶ 21.

The Judges find this criticism of Professor Marx's baseline approach to be appropriate, in that it was not *necessary* to combine the two rights holders in a Shapley Analysis. As Professor Watt explained in his separate criticism, there is no need to collapse the rights holders into a single bargaining entity to eliminate holdout power by the respective rights holders, because the ''heart and soul'' of the Shapley Model is exclusion of the holdout value that any input supplier could exploit in an actual bargain. 3/27/17 Tr. 3073 (Watt). He emphasized that, because the Shapley Model incorporates all possible ''arrivals'' of input suppliers, it eliminates from the valuation and allocation exercise the effect of an essential input supplier holding out every time or arriving simultaneously with another input supplier (or apparently creating Cournot Complement inefficiencies). *Id.* at 3069–70.

However, the foregoing criticism does not pertain to Professor Marx's second Shapley Model—her ''Alternative'' model—in which she maintains the two separate rights holders for musical works and sound recordings. Marx WDT ¶ 146, n.153; 3/20/17 Tr. 1871–72 (Marx). With regard to this Alternative model, Copyright Owners level a more general criticism of Professor Marx's approach that does pertain to her Alternative model (as well as her Baseline model). They assert, through both Professors Gans and Watt, that Professor Marx wrongly distorted the actual market in yet another manner—by assuming the existence of only one interactive streaming service—rather than the presence of competing interactive streaming services. Watt WRT ¶¶ 25, 32 n.19, 17; Gans WRT ¶¶ 55–56; see *also* COPFF ¶ 755. By this change, they argue, Professor Marx inflated the Shapley surplus attributable

[118] Because her baseline approach combines sound recording and musical works licensors into a single entity, Professor Marx does not break out separate royalties for musical works performances or mechanical licenses. However, she recommends that the mechanical rate should be lowered based on this finding. Professor Marx does specifically estimate the musical works rate under her Alternative approach.

to the interactive streaming services compared to the actual proportion they would receive in the market.

According to Professor Gans, this simplified assumption belies the fact that the market is replete with many substitutable interactive streaming services, whose competition *inter se* reduces each service's bargaining power. The problem, he opines, is that to the extent the entities being combined are substitutes for one another–such as alternative music services–then combining them ignores the effects of competition between them, thereby inflating their combined share of surplus from the joint enterprise (*i.e.* their Shapley value). Gans WRT ¶ 21.

Professor Marx does not deny that she intentionally elevated the market power of the services by combining them in the model as a single agent. However, she explained that she made this adjustment to offset the concentrated market power that the rightsholders possess, separate and apart from any holdout power, which the Shapley ordering algorithm would address. Thus, Professor Marx explained that her alteration of market power apparently was designed to address an issue—market power—that the Shapley Analysis does not address. 3/20/17 Tr. 1863 (Marx) (''I want a model that represents a fair outcome in the absence of market power, so I am going to have to be careful about how I construct the model that I am not putting in market power into the model.'').[119]

Professor Gans testified that Professor Marx's approach was erroneous because Shapley values are meant to incorporate market power asymmetries, not to eliminate them. Gans WRT ¶ 31 (Shapley values incorporate market power asymmetries). However, the Judges note that Professor Gans acknowledged that in an Australian legal proceeding, he too combined multiple downstream entities into a single entity in his Shapley Model in ''comparison'' to two upstream rights holders. 3/30/17 Tr. 4179 (Gans). Additionally, Professor Watt has authored and published an article (cited at Gans WDT ¶ 65, n.36) in which he too ''artificially'' equalized market power between rights holders and licenses (radio stations) in the same manner. *See* R. Watt, *Fair Copyright Remuneration: The Case of Music Radio,* 7, 25, 35 (2010) 7 Rev. of Econ. Res. on Copyright Issues 21, 25, 35 (2010) (''artificially'' modeling the ''demand side of the market as a single unit, rather than individual radio stations . . . thereby . . . add[ing] (notionally) monopsony power to the demand side'' to offset the monopoly power of the input supplier).

In essence, the import of this criticism is not the faithfulness of Professor Marx's testimony to the Shapley Model; rather, it pertains to her decision to include an adjustment for market power asymmetry that seeks to equalize market power as between Copyright Owners and the streaming services. Her adjustment is consistent with testimony by Professor Katz, who cautioned that a Shapley Analysis takes the parties' market power as a given, locking-in whatever disparities exist. 4/15/15 Tr. 4992–93 (Katz).

The Judges agree with Professor Watt and find that the Shapley Analysis, taking the number of sellers in the market as a given, eliminates the ''hold-out'' problem that would otherwise cause a rate to be unreasonable, in that it would fail to reflect effective (or workable) competition. However, Professor Marx's Shapley Model also attempts to eliminate a separate factor—market power—that she asserts renders a market-based Shapley Analysis incompatible with the objectives of Factors B and C of section 801(b)(1). The Judges will consider the appropriateness of Professor Marx's adjustment for market power in their discussion of these two factors.[120] For purposes of deriving a reasonable (and effectively competitive) rate prior to application of the 801(b)(1) factors, it is sufficient to note that Professor Marx's adjustment is not inconsistent with the traditional Shapley Analysis (as both Professors Watt and Gans have acknowledged in their work outside of this proceeding), and does not disqualify her Shapley value analysis from further consideration.

Professor Marx's alternative approach yielded a musical works royalty rate of between [REDACTED]% and [REDACTED]% of service revenue. 3/20/17 Tr. 1885 (Marx). In that alternative model, Professor Marx found that Spotify's total royalties for musical works and sound recordings combined would range from [REDACTED]% to [REDACTED]% of total revenue, meaning that payments for sound recording rights would be approximately [REDACTED]% to [REDACTED]% of total revenue. *Id.* The ratio of sound recording royalties to musical works royalties under Professor Marx's model is no lower than [REDACTED]% to [REDACTED]%, or [REDACTED]:1. Stated as a percentage of sound recording royalties (*i.e.,* TCC), musical works royalties would thus be [REDACTED]%.[121]

b. Professor Gans's ''Shapley-Inspired Approach''

On behalf of Copyright Owners, Professor Gans presented a model that he described as ''inspired'' by the Shapley approach, but not *per se* a Shapley Analysis. 3/30/17 Tr. 4109 (Gans). At a high level, his Shapley-inspired approach attempted to determine the ratio of sound recording royalties to musical works royalties that would prevail in an unconstrained market. After calculating that ratio, he estimated what publisher mechanical royalty rates would be in a market without compulsory licensing by multiplying the benchmark sound recording rates by this ratio. Gans WDT ¶ 63.

Professor Gans began his analysis with two critical assumptions: (1) Publishers and record companies must have equal Shapley values (*i.e.,* must recover equal profits from total surplus), because musical compositions and sound recording performances are perfect complements and essential components of the streamed performance;[122] and (2) record

[119] Although at first blush it would seem more appropriate for Professor Marx to have *directly* adjusted the copyright holders' market power by breaking them up into several entities each with less bargaining power, such an approach would make Shapley modeling less tractable (by increasing the number of arrival alternatives in the algorithm), compared with the practicality of equalizing market power by inflating the power of the streaming services (by reducing them to a single representative agent). For example, in Professor Marx's ''alternative'' Shapley Model, she models four entities, two upstream (musical works holders and sound recording holders), and two downstream (the representative single streaming service and a single alternate distribution outlet). With these four entities, the number of different arrival orders is 4! (factorial), or 24. If Professor Marx instead had broken the musical works copyright holders and the sound recording copyright holders respectively into two entities, the number of total entities would have increased from 4 to 6. The number of arrival orders would then have increased from 24 to 720.

[120] *See infra,* section VI.B. Although the Judges find a market power adjustment relevant in a section 801(b)(1) Factor B and C analysis, it is not a consideration when determining a rate that reflects ''effective competition.'' An effectively competitive rate need not adjust for market power because such a rate does not include consideration of these two factors or their public utility style legislative history antecedents.

[121] TCC percentage is the reciprocal of the sound recording to musical work royalty ratio, expressed as a percentage. Thus, 1/[*redacted*] = [*redacted*] (rounded) or [REDACTED]%.

[122] Modeling the market as having two upstream suppliers of complementary inputs (*i.e.,* a musical works copyright owner and a sound recordings copyright owner) produces the result that Professor Gans assumed in his analysis: The upstream suppliers reap equal profits, though their royalties differ due to differences in their cost structures. Professors Marx, in her ''alternative approach,'' and Watt, in his ''Shapley Model with 3 Streaming Services, models the market in this way. Marx WDT ¶ 201 (Figure 33 in Appendix B) (fifth column shows identical Shapley values for both upstream

company profits from interactive streaming services are used as benchmark Shapley values. Gans WDT ¶ 77. The royalties that result from Professor Gans's analysis will differ, given the different level of costs incurred by music publishers and record companies respectively. *See* Gans WDT ¶¶ 23, 71, 74, 76; Gans WRT ¶¶ 15–17; *see also* 3/30/17 Tr. 3989 (Gans).

Echoing Dr. Eisenach, Professor Gans found these assumptions critical because agreements between record companies and interactive streaming services are freely negotiated, *i.e.,* they are not set by any regulatory body or formally subject to an ongoing judicial consent decree and, accordingly, are also not subject to any regulatory or judicial ''shadow'' that arguably might be cast from such governmental regulation in the market. Accordingly, Professor Gans uses the profits arising from these unregulated market transactions to estimate what the mechanical rate for publishers would be if they too were also able to freely negotiate the rates for the licensing of their works. *See* Gans WDT ¶ 75.

Professor Gans utilized data from projections in a Goldman Sachs analysis to identify the aggregate profits of the record companies and the music publishers, respectively. *See* 3/30/17 Tr. 4017 (Gans). Given his assumption that sound recordings and musical works were both ''essential'' inputs and thus able to claim an equal share of the profits, Professor Gans posed the question: ''[H]ow much revenue do we need to hand to the publishers so that they end up earning the same profits as the labels? *Id.* at 4018.

He found that, for the music publishers to recover their costs and achieve profits commensurate with those of the record companies under his approach, the ratio of sound recording royalties to musical works royalties derived from his Shapley-inspired analysis was 2.5:1 (which attributes equal profits to both classes of rights holders and acknowledges the higher costs incurred by record companies compared to music publishers). *See* Gans WDT ¶ 77, Table 3.

As noted, Professor Gans made a key assumption, treating as accurate Dr. Eisenach's calculation of an effective per play rate for sound recordings of $[REDACTED]. Given those two inputs (the 2.5:1 ratio and the $[REDACTED] per play rate) Professor Gans's approach indicated a market-derived musical works per play royalty rate of $[REDACTED] (rounded). *Id.* ¶ 78, Table 3. However, because the musical works royalty is comprised of the mechanical rate and the performance rate paid to PROs (not to publishers), Professor Gans had to subtract the performance rate. He determined that the percent of revenues attributable to mechanical royalties was 81% of the total musical works royalties, under his approach. Thus, he estimated a mechanical royalty rate of $[REDACTED].[123] well above the Copyright Owners' proposed $0.0015 statutory per play rate, and thus confirming the reasonableness of the Copyright Owners' proposal. *Id.* ¶ 78.

On this basis, Professor Gans also concluded that his Shapley-inspired approach supports the Copyright Owners' per-user rate proposal. Applying the Shapley -based ratio of 2.5:1 to the benchmark per-user rate negotiated by the labels of $[REDACTED] per user per month, and after subtracting the value of the performance rights royalty, Professor Gans obtains an equivalent publisher mechanical rate of $[REDACTED] (rounded) per user per month (*i.e.,* ($[REDACTED]/2.5) × 80%[124]). *Id.* ¶ 85.

The Judges do not accept the rates derived by Professor Gans's Shapley-inspired model, because of its assumption and use of the $[REDACTED] per play sound recording interactive rate. Dr. Eisenach's $[REDACTED] per play sound recording rate is not supported by the weight of the evidence. Moreover, the record company profits are inflated by the inefficient rates created through the Cournot Complements problem that affects the agreements between record companies and streaming services, as noted by the Services' experts in this proceeding, and as the Judges noted in *Web IV.*

However, the Judges find the *ratio* of sound recording to musical work royalties that Professor Gans derived from his analysis to be informative. Professor Gans computed this ratio based on an assumption of equal Shapley values between musical works and sound recording copyright owners. The Judges find this assumption to be reasonable and confirmed by Professor Marx's Shapley Analysis. The Judges also find Professor Gans's reliance on financial analysts' projections for the respective industries to be reasonable.

Expressed as a percentage of sound recording royalties, Professor Gans's 2.5:1 sound recordings to musical works royalty ratio yields a musical works royalty rate of 40% of TCC.

c. Professor Watt's Shapley Analysis

As a rebuttal witness, Professor Watt testified regarding purported defects in Professor Marx's Shapley Model. In addition, he presented alternative modeling intended to apply an adjusted version of Professor Marx's Shapley Model.

Professor Watt found that Professor Marx's approaches contained several flaws and methodological issues. *See* 3/27/17 Tr. 3057 (Watt). Accordingly, he, like Professor Gans, attempted to adjust her modeling in a manner that, in his opinion, generated ''decent, believable results.'' *Id.* at 3058.

In his Shapley Model adjusting Professor Marx's analysis, Professor Watt found that at least [REDACTED]% of interactive streaming revenue should be allocated to the rights holders (as distinguished from a range of [REDACTED]% to [REDACTED]% of total revenues going to rights holders under Professor Marx's analysis). Of this [REDACTED]%, [REDACTED]% should be retained by the musical works copyright holders and [REDACTED]% should be allocated to record companies. Expressed as percentages of revenue, musical works copyright owners would receive [REDACTED]%[125] of total interactive streaming revenue while record companies would receive [REDACTED]%.[126] *See* Watt WRT ¶ 35; 3/27/17 Tr. 3083, 3115–16 (Watt).[127] The ratio of sound recording to musical works royalties under Professor Watt's analysis is thus [REDACTED]% to [REDACTED]%, or [REDACTED]:1. Expressed as a percentage of sound recording royalties, musical works royalties would be [REDACTED]%.

2. Deriving a Royalty Rate

Professors Marx, Gans, and Watt reached conclusions that were broadly consistent insofar as they all found that *the ratio* of sound recording to musical

providers); Trial Ex. 2619, at 8 (Appendix 3 to Watt WRT) (''Since there are only two players in this game, and each would have veto rights over the business, the net surplus would be shared equally between them.'').

[123] [*redacted*] × 0.81 = 0.0025 (rounded).

[124] Professor Gans multiplies the per play rate by 81% but the per user rate by 80%. *Compare* Gans WDT ¶ 78 *with* Gans WDT ¶ 85. The rate derived by Professor Gans was the 80% figure. Gans WDT ¶ 77, Table 3, line 17. This discrepancy has no impact on the relevance of his analysis.

[125] [REDACTED] (rounded).

[126] [REDACTED] (rounded).

[127] At present, record companies receive approximately 60% of total interactive streaming revenue, substantially higher than the [REDACTED]% calculated by Professor Watt. He explains that the reason for this difference is clear; the mechanical rate is artificially depressed by regulation, allowing the sound recording rate (set in an unregulated market) to appropriate a larger share of the royalties, given the perfect complementarity of the two rights. Watt WRT ¶ 36.

works royalty rates should decline. The following table summarizes these experts ratios, expressed both as ratios and percentages, and includes for comparison the actual ratio of sound recording to musical works royalties paid by Spotify, as well as the ratio implied by the prevailing headline percent of revenue rates for musical works and sound recordings.

SOUND RECORDING TO MUSICAL WORKS RATIOS AND TCC PERCENTAGES

| Scenario | Ratio | TCC percentage [128] |
|---|---|---|
| Watt Shapley Analysis | [REDACTED]:1 | [REDACTED] |
| Gans Shapley-inspired Analysis | [REDACTED]:1 | [REDACTED] |
| Marx Shapley Analysis | [REDACTED]:1 | [REDACTED] |
| *Spotify Actual* | *[REDACTED]:1* | *[REDACTED]* |
| *Headline Percent of Revenue Rates* | *5.71:1* | *17.5* |

All of the experts' ratios are well below the current ratio of approximately [REDACTED]:1 for Spotify, and approximately 5.71:1 comparing the 10.5% headline rate to an average sound recording rate of approximately 60% of revenue. Accordingly, under their respective Shapley Models, Professors Marx, Gans, and Watt appear to be in general agreement that the ratio of sound recording to musical works royalties should decline.

Both Professor Marx's and Professor Watt's models show lower combined royalties being paid by services than are currently paid in the marketplace. Professor Marx's model produces combined royalties of between [REDACTED]% and [REDACTED]% of service revenue, while Professor Watt's model produces combined royalties of between [REDACTED]% and [REDACTED]%.[129] Even the highest of these values is less than [REDACTED].

The discrepancy in total royalties between the models and the real world is explained, in part, by the absence of supranormal complementary oligopoly profits in the Shapley Model, and the presence of those profits in the actual market. In addition, the total royalties paid in Professor Marx's model are lowered still further by her decision to equalize bargaining power between the content providers and services by modeling the services as a single entity.

Even with lower combined royalties, the models also show musical works royalties at or above the prevailing headline rate of 10.5%. Mathematically that is possible only because the models also yield lower royalties for sound recordings at all levels of total royalties. The following tables show the percentage revenue royalty rates for musical works and sound recordings that are produced by applying the experts' ratios to the different levels of total royalties. The final column shows the rates yielded by applying the ratios to Spotify's total royalty obligation of [REDACTED]%.

IMPLIED MUSICAL WORK ROYALTY (% OF REVENUE) BASED ON RATIO AND TOTAL ROYALTIES [130]

| Expert | Ratio | TCC % | [REDACTED] % | [REDACTED] % | [REDACTED] % | [REDACTED] % | [REDACTED] % | [REDACTED] % |
|---|---|---|---|---|---|---|---|---|
| Watt | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Gans | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Marx | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

IMPLIED SOUND RECORDING ROYALTY (% OF REVENUE) BASED ON RATIO AND TOTAL ROYALTIES [131]

| Expert | Ratio | TCC % | [REDACTED] % | [REDACTED] % | [REDACTED] % | [REDACTED] % | [REDACTED] % | [REDACTED] % |
|---|---|---|---|---|---|---|---|---|
| Watt | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Gans | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Marx | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

Professor Watt explains the discrepancy between the sound recording royalty rates yielded by the Shapley Analysis and the higher rates that exist in the market:

> [The reason] my predicted fraction of revenues for sound recording royalties is significantly less than what is observed in the market [is] simple. The statutory rate for mechanical royalties in the United States is significantly below the predicted fair rate, and the statutory rate effectively removes the musical works rightsholders from the bargaining table with the services. Since this leaves the sound recording rightsholders as the only remaining essential input, bargaining theory tells us that they will successfully obtain most of the available surplus.

Watt WRT ¶ 36.[132]

Applying the ratios derived from the experts' models to the higher total royalties that prevail in the marketplace would yield musical works royalty rates higher than the models predict. For example, based on Professor Marx's lowest estimate of overall royalties of [REDACTED]%, her [REDACTED]:1

[128] TCC percentage is the reciprocal of the sound recording to musical work royalty ratio, expressed as a percentage.

[129] Professor Watt identified [REDACTED]%—the arithmetic mean of these two numbers—as his preferred figure.

[130] The royalty rate is computed using the formula $R_{mw} = R_t \div (1 + r)$ where $R_{mw}$ is the musical work royalty rate, $R_t$ is the combined royalty rate for musical works and sound recordings, and $r$ is the ratio of sound recording to musical work royalties.

[131] The royalty rate is computed using the formula $R_{sr} = R_t \div (1 + 1/r)$ where $R_{sr}$ is the musical work royalty rate, $R_t$ is the combined royalty rate for musical works and sound recordings, and $r$ is the ratio of sound recording to musical work royalties.

[132] More specifically, Professor Watt calculates that, for each dollar that the statutory rate holds down fair market musical works royalties, [REDACTED] cents is captured by the record companies (and [REDACTED] cents is captured by the streaming services). Watt WRT ¶ 23, n.13 & App. 3.

ratio (or [REDACTED]% TCC percentage) would yield percent-of-revenue rates for musical works of [REDACTED]%.[133] Using Spotify as an example, however, actual combined royalties for musical works and sound recordings are approximately [REDACTED]% of revenue. That same [REDACTED]:1 ratio would yield a percent-of-revenue rate for musical works of [REDACTED]%.[134] or nearly [REDACTED] percentage points higher than the model.

This is problematic because the sound recording rate against which the TCC rate would be applied is inflated both by the existence of complementary oligopoly conditions in the market for sound recordings and what Professor Watt describes as the record companies' ability to obtain most of the available surplus due to the music publishers' absence from the bargaining table. In order to derive usable TCC rates from the Shapley Analyses the Judges must address these two issues.

The Judges find that the problem of, in essence, importing complementary oligopoly profits into the musical works rate through a TCC percentage can be avoided by reducing the TCC percentage. Specifically, the TCC percentage should be reduced to a level that produces the same (non-complementary-oligopoly) percentage revenue rate when applied to the existing [REDACTED]% combined royalty as the Shapley-produced TCC percentage yields when applied to the theoretical combined royalties in the model. For example, Professor Watt's Shapley Analysis produces a [REDACTED]:1 sound recording to musical work ratio, or a [REDACTED]% TCC percentage. At his preferred combined royalty rate of [REDACTED]%, the implied musical works rate is [REDACTED]% of revenue. The TCC rate that produces the same [REDACTED]% of revenue rate under existing conditions would be [REDACTED]%.[135] These adjusted TCC rates are summarized in the following table.

| Expert | TCC from model | Adjusted TCC using [REDACTED]% combined royalties | Adjusted TCC using [REDACTED]% combined royalties | Adjusted TCC using [REDACTED]% combined royalties | Adjusted TCC using [REDACTED]% combined royalties | Adjusted TCC using [REDACTED]% combined royalties |
|---|---|---|---|---|---|---|
| Watt | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% |
| Gans | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% |
| Marx | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% |

As to the issue of applying a TCC percentage to a sound recording royalty rate that is artificially high as a result of musical works rates being held artificially low through regulation, the 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.

> [T]he reason why the sound recording rate is so very high is because the statutory rate is very low. And if you increase the statutory rate, the bargained sound recording rate will go down.

3/27/17 Tr. 3090 (Watt). 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. Id. at 3091.

As must-have suppliers in an unregulated market, record companies are in a position to walk away from negotiations with the Services and, effectively, put them out of business. That they have not done so demonstrates that it is not in their economic interest to do so.[136] The decline in sales of physical copies and permanent digital downloads, along with the growth of streaming, is a powerful economic motivation for record companies to pursue deals with the Services that ensure the continued survival and growth of the music streaming industry. In negotiating those deals both sides will be cognizant of the effect on the Services' content cost of a decision by this body.

In his separate opinion, Judge Strickler expresses concern that "if mechanical royalty rates were to increase to a level that significantly reduced the profits of the record companies from streaming, there is no evidence in the record in this proceeding that indicates whether the record companies would decide to maintain the current vertical structure of the market and docilely accept such a revenue loss." [137] The Judges acknowledge the concern articulated by Judge Strickler, but note that it applies potentially to any rate increase for musical works that reduces record company streaming profits.[138] Just as the Judges have noted that there is no evidence to suggest that the current level of short-term losses is the maximum that the Services can absorb in their Shumpeterian competition for market share, they note that there is no basis to assume that record companies will head for the exits if their profits from streaming drop below current levels. At bottom, this concern goes not to the decision whether or not to increase the mechanical rate, or to adopt a particular rate structure, but to the *magnitude* of any rate increase, and measures that should be taken to reduce any disruption the increase might cause to the industry. The Judges take both concerns into account in this Determination.

The foregoing exercise produced a broad range of potential rates: TCC rates ranging from [REDACTED]% to [REDACTED]%, which correspond to implied percent of revenue rates from [REDACTED]% to [REDACTED]%. The Judges narrow that range by reference to the strength of the evidence supporting the numbers underlying those rates.

Professor Watt testified that the data Professor Marx used in her Shapley model was derived from 2015 Spotify financials and, as a result, understated current downstream revenue. Watt WRT ¶¶ 37, 43–44. In addition, Professor Marx included a number of items as downstream costs that, in Professor Watt's view, should be excluded from

[133] [REDACTED] (rounded).

[134] [REDACTED]

[135] The target TCC rate is computed using the formula $TCC = 1 \div ((R_t/R_{mw}) - 1)$, where $R_t$ is the combined royalty rate in the marketplace ([REDACTED]%), and $R_{mw}$ is the musical work royalty rate yielded by the Shapley value analysis.

[136] The evidence in *Web IV* revealed that the record companies' strategy has been to "[REDACTED]." *Web IV* (restricted version) at 63.

[137] Judge Strickler expresses concern that an increase in the mechanical rate might prompt the record companies to create (or acquire) their own streaming services, rather than accept a lower royalty rate from the existing Services. It is well-established that it is not the Judges' role to protect the current players in the industry. Companies—even major players in the industry—enter and exit the market regularly. That market fluidity is not the sort of disruption the Judges consider under the fourth 801(b)(1) factor.

[138] The Judges note that Professor Watt's insight applies not only to a Shapley-derived TCC rate, but to *any* rate structure that results in an increase in what services pay for musical works. Bargaining theory instructs that the services and the record companies will take into account any increase in the statutory royalties that the services must pay.

the model. Id. ¶¶ 57–59. The net effect of understating downstream revenue and overstating downstream costs is to drive down the amount of surplus allocated to the upstream content providers. Id. ¶ 42. Although Professor Marx addressed the reasons for her decision to use 2015 cost and revenue data in her model, she did not address the effect that her choice had on allocation of surplus, or attempt in any way to correct for it. See 3/20/17 Tr. 1880–81, 1906–08 (Marx). The Judges find that the total royalty values produced by Professor Marx's models understate what would be a fair allocation of surplus to the upstream content providers. Consequently, the Judges view Professor Marx's top value for total royalties ([REDACTED]%) to constitute a lower bound for total royalties in computing a royalty rate.

As Professor Watt's total royalty figures were presented as rebuttal testimony, Professor Marx, on behalf of the services, did not have an opportunity to rebut them. The Judges give them weight only to the extent of viewing his lowest figure ([REDACTED]%) as an upper bound for total royalties in computing a royalty rate.

In a similar vein, Professor Marx did not have an opportunity to rebut Professor Watt's [REDACTED]:1 sound recording to musical work royalty ratio. Professor Watt derived that ratio using data from Professor Marx's model, yet produced vastly different results. *See* Trial Ex. 2619, at 9 (Appendix 3 to Watt WRT). The reason for this disparity in outcome was not adequately explored or explained. The Judges give Professor Watt's [REDACTED]:1 ratio no weight.[139]

The Judges are left with the following potential royalty rates.

| Expert | TCC from model | Adjusted TCC using [RE-DACTED]% combined royalties | Implied percent of revenue rate using [REDACTED]% | Adjusted TCC using [RE-DACTED]% combined royalties | Implied percent of revenue rate using [REDACTED]% |
|---|---|---|---|---|---|
| Gans | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% |
| Marx | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% | [REDACTED]% |

The Judges find, therefore, that the zone of reasonable rates ranges from [REDACTED]% to [REDACTED]% of TCC, or, expressed as equivalent percent of revenue rates, [REDACTED]% to [REDACTED]%. Taking into consideration the totality of the evidence presented in this proceeding, the Judges select [REDACTED]% of TCC/[REDACTED]% of revenue as the most appropriate rate within that zone of reasonableness.

*E. Other Royalty Rates*

1. Royalty Rate for Incidental Digital Phonorecord Deliveries

The Act requires the Judges in setting phonorecord mechanical license royalty rates and terms to distinguish between (i) digital phonorecord deliveries where the reproduction or distribution of a phonorecord is incidental to the transmission which constitutes the digital phonorecord delivery, and (ii) digital phonorecord deliveries in general. 17 U.S.C. 115(c)(3)(C), (D). The extant regulations do not mention incidental DPDs, but provide that a limited download is ''a general digital phonorecord delivery under 17 U.S.C. 115(c)(3)(C) and (D).'' 37 CFR 385.11 (and incorporated into § 385.21). It appears the parties' 2012 Settlement terms failed to make the distinction the statute requires of the Judges.

Legislative history leading up to the enactment of the Digital Performance Right in Sound Recording Act of 1995 describes incidental DPDs as the transmission of copies that are made solely to facilitate streaming, *i.e.,* via a transmission system ''designed to allow transmission recipients to hear sound recordings substantially at the time of transmission.'' *See* S. Rep. No. 104–138, at 39 (1995). If the recipient does not retain those copies for subsequent playback, then the copies are considered ''incidental deliveries.'' *Id.* Copies retained for subsequent playback, whether ''limited'' or ''permanent'' fall into the category of ''general phonorecord delivery.'' *Id.* Further, if a transmission system supports retention of digital phonorecords for subsequent playback, but the transmission recipient chooses not to do so, then the initial delivery could be consider incidental. *Id.*

The Copyright Office explored the question of identifying incidental DPDs in an extended rulemaking proceeding.[140] During the study of the issue, Services identified potentially incidental copies at the service offering level (variously called ''server-, root-, encoded-, or cached-'' copies) as well as at the end user level (often called ''buffer'' copies). The question, however, remained unresolved. In *Phonorecords I,* the Judges adopted the 2008 Settlement which included ''an incidental digital phonorecord delivery'' in the definition of ''Interactive Stream.'' 74 FR at 4529. After a finding of legal error by the Register of Copyrights (Register),[141] the Judges deleted the reference. *See* 74 FR 6832, 6833 (Feb. 11, 2009). The distinction did not reappear in the *Phonorecords II* adoption of the 2012 Settlement. *See* 78 FR 67938, 67943 (Nov. 13, 2013).

The record in this proceeding is devoid of factual evidence that demands the rate distinction. The Judges conclude, however, that they may, indeed must, address the distinction as a matter of law. Reviewing the legislative history, the statutory language, and the history of study of the issue by the Copyright Office, the Judges conclude that classification of an incidental DPD is a function of a Service's technological functionality and, to some extent, an end user's subsequent conduct.

In the context of interactive streaming and similar modes of delivery where there is no general DPD, the royalty rates in this determination covering that mode of delivery are, *de facto,* the royalty rates for the incidental DPDs that enable the activity. To the extent

[139] By contrast, Professor Marx had ample opportunity to critique Professor Gans's report. See Marx WRT ¶¶ 73–75. Her criticism focuses on his decision not to use the Shapley model to determine the division of surplus between the downstream services and the upstream copyright owners. Id. ¶ 74. She does not challenge the specific ratio of sound recording to musical works royalties that he derives from his model and that the Judges use here.

[140] When it issued an interim rule, the Copyright Office concluded that in a determination turning upon a conclusion of ''when a DPD is an incidental DPD,'' the Judges should make that determination ''in the context of a factual inquiry . . . if such a determination proves to be relevant.'' 73 FR 66173, 66179 (Nov. 7, 2008).

[141] The Register noted that the regulation the Judges adopted as part of a settlement among the parties ''overstates the scope of the section 115 license with respect to interactive streams.'' 74 FR at 4539. By way of clarification, the Register noted that ''an interactive stream that delivers a reproduction of a sound recording that qualifies as a DPD is, for purposes of the license, an incidental DPD.'' *Id.* (''a stream—whether interactive or non-interactive—may or may not result in a DPD depending on whether all the aforementioned criteria are met.'').

any of the configurations covered by the royalty rates set in this determination entail both incidental and general DPDs, the royalty rate is for all DPDs, incidental or general, that result from the activity.[142]

2. Royalty Rates for Non-Revenue Bearing Service Offerings

In the 2012 rates and terms, the parties essentially rolled forward the rate structure first constructed in the 2008 Settlement. In 2012, the parties created a separate aggregation of service offerings in a new subpart C [143] to the regulations, agreeing to rates and terms similar to those to which they agreed in subpart B for interactive streams and limited digital downloads. Based on the evidence in this record, it appears limited offerings, and bundled service offerings are not different in kind from interactive streaming and limited downloads. No party offered compelling evidence to establish the necessity for segregating the current subpart C service offering configurations from current subpart B service offering configurations.

In their review of the current and proposed rates and terms, however, the Judges see a basis to distinguish promotional or non-revenue producing offerings from revenue-producing offerings. In some instances locker services—particularly purchased content locker services—are free to the user and produce no revenue for the Service separate from the purchase price for the content. In some instances, a service may transmit a sound recording embodying a musical work that fits the definition of a promotional offering; that is, a sound recording that a Record Company makes available at no cost to the service and for a limited period. The Services' transmissions of those sound recordings are made solely for the purpose of promoting a particular sound recording, an album, or the artist performing the musical work. Record companies distributing promotional recordings bear responsibility, if any there be, for the licensing of the embodied musical work. In other instances, a Service might offer a free or reduced-price subscription to its streams, or modified versions of its subscription-based services, to entice free users to become paying subscribers after the free trial period. When services choose to deliver no-cost or non-revenue bearing offerings qualifying as promotional, ''free trial,'' or no-charge locker services, the Services will not pay mechanical musical works royalties. Neither shall the Services deduct the costs of those service offerings from service revenue, for purposes of calculating royalties payable on a percent of service revenue.

## VI. The Four Itemized Factors in Section 801(b)(1)

The Copyright Act requires that the Judges establish ''reasonable'' rates and terms for the section 115 license. In addition, section 801(b)(1) instructs the Judges to set these rates ''to achieve the following objectives'':

Factor A: To maximize the availability of creative works to the public;

Factor B: To afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions;

Factor C: To reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication; and

Factor D: To minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.

17 U.S.C. 115(c), 801(b)(1).[144]

The four itemized factors in section 801(b)(1) require the Judges to exercise ''legislative discretion'' in making independent policy determinations that balance the interests of copyright owners and users.'' *SoundExchange, Inc.* v. *Librarian of Cong.,* 571 F.3d 1220, 1224 (D.C. Cir. 2009); *see Recording Indus. Ass'n Am.* v. *CRT,* 662 F.2d 1, 8–9 (D.C. Cir. 1981) (''*Phonorecords 1981 Appeal*'') (analyzing identical factors applied by predecessor rate-setting body and holding that statutory policy objectives of 801(b)(1) ''invite the [Board] to exercise a legislative discretion in determining copyright policy in order to achieve an equitable division of music industry profits between the copyright owners and users'').

The four factors ''pull in opposing directions,'' leading to a ''range of reasonable royalty rates that would serve all these objectives adequately but to differing degrees.'' *Phonorecords 1981 Appeal,* 662 F.2d at 9. (D.C. Cir. 1981) (citations omitted). Certain factors require determinations ''of a judgmental or predictive nature,'' while others call for a broad fairness inquiry. *Id.* at 8 (citations & quotations omitted). Accordingly, the Judges are ''free to choose'' within the range of reasonable rates . . . within a 'zone of reasonableness.' '' *Id.* at 9 (citations omitted).

In prior rate determination proceedings, the Judges have undertaken the ''reasonableness'' analysis followed by consideration of the four itemized factors. They followed that approach in this proceeding. The Judges conclude, however, that their consideration of the four itemized section 801(b)(1) factors in this proceeding also provides further support for their findings regarding a reasonable rate structure and reasonable rates.

The D.C. Circuit recently reiterated the relationship between the 801(b) standard and market-based rates by contrasting that standard with the willing buyer/willing-seller standard set forth in 17 U.S.C. 114(f)(2)(B). The court noted that the two standards are distinguishable by the fact that, unlike section 114(f)(2)(B), *section 801(b)(1) does not focus on unregulated marketplace rates. SoundExchange, Inc.* v. *Muzak LLC,* 854 F.3d 713, 715 (D.C. Cir. 2017). However, to the extent market factors may implicitly address any (or all) of the four itemized factors, the reasonable, market-based rates may remain unadjusted. If the evidence suggests that market-based rates fail to address any (or all) of these four itemized policy factors, the Judges may adjust the reasonable, market-based rate appropriately. *See* Determination of Rates and Terms . . . , 73 FR 4080, 4094 (Jan. 24, 2008) (*SDARS I)* (applying same factors, holding ''[t]he ultimate question is whether it is necessary to adjust the result indicated by marketplace evidence in order to achieve th[e] policy objective[s].'').[145]

### *A. Factor A: Maximizing Availability of Creative Works to the Public*

Factor A provides that rates and terms should be determined to ''maximize the availability of creative works to the public.'' 17 U.S.C. 801(b)(1)(A). Of particular importance, this provision unambiguously links the *upstream* rates

[142] The rates for permanent digital downloads and limited downloads set by the parties to the March 2017 subpart A settlement do not distinguish between incidental DPDs and DPDs in general. The Judges deem those rates to cover all DPDs, incidental and general, that result from those modes of delivery.

[143] The so-called subpart C service offerings included limited offerings, mixed service bundles, music bundles, paid locker services, and purchased content locker services.

[144] The 1976 Act applied section 801(b)(1) and its four-factor test to new licenses. The lone existing statutory license carried forward into the 1976 Act from the 1909 Copyright Act and made subject to this standard was the mechanical license at issue in this proceeding.

[145] Thus, the Judges reject Copyright Owners' argument that the first three itemized section 801(b)(1) factors *per se* reflect the same forces that shape the rate set in the marketplace. *See* 4/4/17 Tr. 4589, 4666 (Eisenach).

and terms that the Judges are setting with the *downstream* market, in which ''the public'' is listening to sound recordings that embody musical works.

In the *SDARS I* Determination, the Judges made a general statement, attributed to an expert economic witness, Dr. Ordover, that ''[w]e agree . . . that 'voluntary transactions between buyers and sellers as mediated by the market are the most effective way to implement efficient allocations of societal resources.' '' *SDARS I,* 73 FR at 4094 (quoting from Written Direct Testimony of Janusz Ordover at 11). However, as the Judges' present discussion of the economics of this market should make plain, they do not agree that such a broad statement captures all the economic realities of the market. In fact, Professor Ordover's full testimony in *SDARS I* demonstrates that he based his statement on the same particular aspects of the pricing of copies of intellectual property (such as musical works or sound recordings) that the Services' expert witnesses and the Judges have identified in this proceeding.

On behalf of the Services in the present proceeding, Professor Marx approaches Factor A in a manner that is at once novel (for these proceedings) and consistent with fundamental and relevant economic principles. Specifically, she asserts that maximization of the availability of musical works (embodied in sound recordings) to the public, through interactive streaming, requires that the combined ''producer surplus'' and ''consumer surplus'' be maximized, because that leads to listening by all segments of the public regardless of their WTP. In Professor Marx's analysis ''producer surplus'' means ''the amount by which the total revenue received by a firm for units of its product exceeds the total marginal cost. . . .'' A Schotter, *Microeconomics: A Modern Approach* at 389 (2009).[146] The ''consumer' surplus'' means ''[t]he difference between what the consumer would be willing [and able] to pay and what the consumer actually has to pay.'' *Mansfield & Yohe,* at 93.

When a perfectly competitive market is in equilibrium (or tending that way) ''the sum of consumer surplus . . . and producer surplus . . . is maximized.'' *Schotter,* at 420. By contrast, if a market is not perfectly competitive because the sellers have some degree of market power, then the level of output is somewhat restricted, producer surplus is increased and consumer surplus is decreased—with a portion of the overall surplus redistributed to producers/sellers. Another portion lost as ''a pure 'deadweight' loss . . . the principal measure of the allocation of harm'' arising from the exercise of market power. *Mansfield & Yohe, supra,* at 499; *see* Schotter, at 398 (accepted definition of ''deadweight loss'' is ''[t]he dollar measure of the loss that society suffers when units of a good whose marginal social benefits exceed the marginal social cost of providing them are not produced because of the profit-maximizing motives of the firm involved.'').[147]

As the foregoing definitions imply, the two surpluses are measured by reference to a single equilibrium price. However, when Copyright Owners, like any sellers, are able to *price discriminate,* they enlarge the total value of the combined surpluses, diminish the ''deadweight loss'' and appropriate the larger, combined surplus for the producers. *See* H. Varian, *Intermediate Microeconomics: A Modern Approach* 462–63 (2010) (With price discrimination, ''[j]ust as in the case of a competitive market, the sum of producer's and consumer's surplus is maximized [but with] the producer . . . getting *the entire* surplus generated in the market. . . .'').

Professor Marx marshals these microeconomic principles to explain why the 2012 Settlement rate structure tends to incentivize and support the maximization of musical works available to the public under Factor A. Marx WDT ¶¶ 119–122, 123–133. As she testified at the hearing:

> [H]aving different means of price discrimination is going to allow greater efficiency to be achieved [i]f we have a way for low willingness to pay consumers to access music, for example, student discounts, family discounts or *ad-supported streaming, where low-willingness-to-pay consumers can still access music in a way that still allows some monetization of that provision of that service.*

3/20/17 Tr. 1894–95 (Marx) (emphasis added); *see* Marx WDT ¶ 12 (''An economic interpretation of [F]actor A is that the royalty structure should ''maximize the pie'' of total producer and consumer surplus. . . .'').

Professor Marx contends that the price discriminatory rate structure is superior to a per play model in maximizing the availability of musical works to the public:

> The subscription model provides an efficiency benefit because the price of a play is equal to the marginal cost of roughly zero—a subscriber faces the true marginal cost of playing a song over the internet and thus consumes music at the efficient level. When subscribers face a per-play royalty cost of zero, interactive streaming services have the appropriate incentive to encourage music listening at the margin.
>
> In contrast, if interactive streaming services faced a positive per-play royalty cost, they would have a diminished incentive to attract and retain high-use consumers, the very type of consumers who create the most social surplus through their listening. They would also have an incentive to discourage music listening among the high-use consumers they retain. The higher the level of per-play royalties is, the more this incentive might affect the behavior of interactive streaming services.

*Id.* at ¶¶ 130–131 & n. 135.[148]

Professor Marx's analysis is based on an understanding that maximizing the availability of musical works is a function of incentives to distributors and a function of *downstream* demand. She notes, however, that the variable, percent-of-revenue rate structure is consistent with agreements in the unregulated *upstream* sound recording market, where record companies license sound recordings to these same interactive streaming services. She notes:

> Ironically, given the preference of . . . Copyright Owners' economists for market outcomes, . . . they support a proposal that would tend to eliminate [REDACTED] interactive streaming, *which the unregulated sound recording side of the market has facilitated.* [Copyright Owners'] proposal would also completely do away with percentage-of-revenue rates that form a key part of unregulated rates negotiated between

[146] For present purposes, marginal cost includes opportunity cost as well as marginal production cost, regarding the marginal cost of distributing copies of the musical works (embodied in interactively streamed sound recordings).

[147] To be clear, this ''harm'' is not conclusive evidence that such static market power is harmful, or even inefficient, on balance, in a dynamic sense. A monopoly may be more efficient in reducing unit costs because of necessary scale (such as a natural monopoly) or because of superior production techniques. And again, when marginal production costs (of copies) are essentially zero, exercise of market power by copyright owners (including owners of collectivized repertoires such as record companies, music publishers and PROS) can be necessary to induce the production of copyrighted goods (such as musical works and sound recordings), because without production there is nothing to be copied. But these efficiencies only demonstrate why such market power should not be dissipated, and are not relevant to the narrower issues at hand: how to maximize the availability of goods and to set reasonable rates given the otherwise beneficial existence of such market power.

[148] With regard to Factor A as it relates to Copyright Owners' proposal, Professor Marx also notes the supply-side ''Cournot Complements'' problem created by Copyright Owners' reliance on the unregulated sound recording market. This is a problem because rates in such a ''must have'' unregulated market can be even higher than monopoly rates, thereby depressing the quantity supplied—contrary to a goal of maximizing the availability of musical works. *See* 4/7/17 Tr. 5532 (Marx).

music labels and interactive streaming services.

Marx WRT ¶ 84 (emphasis added).

Beyond Professor Marx's theoretical arguments, Dr. Leonard notes that the existing (price-discriminatory) rate structure that has existed for two rate periods. He contends there is no evidence that songwriters as a group have diminished their supply of musical works to the public. In fact, he notes that the music publishing sector has been profitable throughout the present rate period. 3/15/17 Tr. 1120 (Leonard).

Dr. Leonard is correct that there is no evidence in the record that songwriters as a group have diminished their supply of musical works to the public. No participant performed such an empirical study. Nevertheless, there is ample, uncontroverted testimony that songwriters have seen a marked decline in mechanical royalty income over the past two decades, and that this decline has rendered it increasingly difficult for non-performing songwriters (*i.e.,* songwriters with income from songwriting only and not from performing or recording music) to earn a living practicing their craft. For example, Mr. Steve Bogard, a successful veteran songwriter from Nashville, testified that ''I have written many songs that have become hits and continue to do so. However, over the past few years, my income has not reflected my continued success because the interactive streaming services are paying a fraction of what I earn from physical sales and permanent downloads.'' Witness Statement of Steve Bogard, Trial Ex. 3025, ¶ 32 (Bogard WDT). Lee Thomas Miller, another successful Nashville-based songwriter, when asked to describe the mechanical royalty income he earns from on-demand streaming, stated ''[i]t is so insignificant that we rarely even scroll down and look at the line items. . . . [Y]ou look at these numbers of millions of spins and then you look at the tens of dollars that they pay.'' 3/28/17 Tr. 3517–18 (Miller).

Mechanical royalties play a critical role in enabling professional songwriters to write songs as a full-time occupation.[149] Professional songwriters have traditionally subsisted on a ''draw,'' a periodic advance against future mechanical royalties that music publishers pay out like a salary. See 3/23/17 Tr. 2931 (Herbison). ''In many cases, the advances we pay our songwriters are their main source of income to cover living expenses, allowing them to dedicate as much of their time as possible to songwriting instead of having to take other work to make ends meet.'' Witness Statement of Justin Kalifowitz, Trial Ex. 3022, ¶ 15 (Kalifowitz WDT). If the mechanical royalties from which music publishers can recoup advances decrease, so too do the advances that music publishers are willing to pay out. ''[I]n the non-digital era, those draws for brand new writers, it wasn't uncommon for them to be in the $20,000, $30,000 range when those dollars meant more, 20 years ago. Today the standard is $12,000.'' 3/23/17 Tr. 2932 (Herbison).

The decline in royalties has diminished some music publishers' willingness to make or continue publishing agreements with songwriters:

> The availability of publishing deals has significantly decreased. It is alarming that in Nashville there are so many fewer songwriters than there were just a few years ago. Most estimates say that there are less than one-quarter of the number of professional songwriters than there were just 10 years ago. Many songwriters in Nashville who earned a full-time living from royalty payments are no longer signed to publishing deals.

Bogard WDT ¶ 41. Diminished availability of publishing deals means fewer new songwriters entering the profession:

> Publishers cannot afford to sign as many songwriters as they did in the past. Music publishers typically invested in younger writers who might not produce immediate results and then recouped their money when those writers started earning royalties on album cuts. Now, when they do sign writers, music publishers increasingly turn to recording artist and producer writers, so they can hedge their bets with a better chance of recordings being released.

Bogard WDT ¶ 42; see also Witness Statement of Liz Rose, Trial Ex. 3024, ¶ 20 (Rose WDT) (''we used to sign more songwriters and give them five or six years to hone their craft . . . but we can't afford to do that anymore''). Development of those songwriters who are fortunate enough to sign publishing deals is also suffering.

> When I first arrived in Nashville, experienced and established songwriters would invite young, talented songwriters to write with them. This was a very illuminating experience for the young songwriters and helped them grow into better professionals. It also gave the established writer new ideas and influences. Today, a professional non-performing songwriter cannot simply try to write a great song alone or with co-writers who are also professional songwriters, then hope that an artist records it.
>
> Now, an established songwriter cannot mentor young songwriters if he or she wants to maintain his living. Veteran songwriters, such as myself, simply do not have time. Instead, I spend three to four days a week with young recording artists who already have record deals and need help writing their songs. These recording artists are sometimes very talented songwriters, but it often takes the craft and art of the professional writer to turn their thoughts into commercial songs.

Id. ¶¶ 44–45; see also Witness Statement of Lee Thomas Miller, Trial Ex. 3023, at ¶ 6 (L. Miller WDT) (''Publishers can simply not afford to 'develop' as many writers as they once did.'').

To be sure, not all of the diminution of mechanical royalty income has been a result of the shift from physical product and permanent downloads to streaming. Digital piracy, and the unbundling of the album[150] have played significant parts in reducing songwriter income. *See* 3/23/17 Tr. 2937, 2940–41 (Herbison). It is not within the Judges' authority to roll back the clock, as it were, and remedy every economic force that has diminished songwriters' income over the past two decades. Nevertheless, the Judges find that the evidence in this proceeding supports a conclusion that the existing rates for mechanical royalties from interactive streaming are a contributing factor in the decline in songwriter income, and that this decline has led to fewer songwriters. If this trend continues, the availability of quality songs will inevitably decrease.[151]

Copyright Owners, principally through the rebuttal testimony of Professor Watt, argue that Professor Marx has made a fundamental error in equating the maximizing of availability of musical works with a maximization of the sum of the producer and consumer surplus. Watt WRT ¶ 10. According to Professor Watt, ''A better understanding of criterion A is that the royalty payments should ensure that a

[149] Justin Kalifowitz, founder and CEO of an independent music publisher, testified that ''[q]uality songwriting cannot be relegated to a part-time hobby; it is a calling and a career.'' Witness Statement of Justin Kalifowitz, Trial Ex. 3022, ¶ 14 (Kalifowitz WDT).

[150] Album sales provided songwriters income from ''album cuts,'' *i.e.,* songs that were not hits, but provided royalty income from album sales. In the current singles market that dominates download sales, hit singles get sold (and provide royalty income), but lesser-known tracks generally have much lower sales and royalties. 3/23/17 Tr. 2938–40 (Herbison). Similarly, interactive streaming permits listeners to stream individual songs, even if they were released as part of an album. Noninteractive streaming of albums is not permitted without a waiver of the sound recording performance complement. 17 U.S.C. 114(d)(2)(C)(i), j(13)(A)).

[151] The Judges do not discount the quality of existing songs. Indeed, music publishers continue to market the ''old standards'' to young performers. The Judges do not measure availability of creative works by looking at music publishers' profits or by counting recycled songs contributing to those profits. Maximizing the availability of creative works includes, if not focuses on, new creative works.

plentiful supply of works is forthcoming into the future. . . .'' *Id.* To accomplish that end, Professor Watt argues the rates should be set to ensure that ''creators are given the correct incentives to continue to create and make available valuable works.'' *Id.*

Professor Watt argues that even if the rates and rate structure are designed to maximize consumer and producer surplus, that maximization would not inform the Judges as to whether that result satisfies Factor A. Rather, according to Professor Watt

> In effect, a royalty structure is simply a way in which producer surplus, once created, is shared between the interactive streaming firms and the copyright holders, but in and of itself, the structure does not determine the size of either producer or consumer surplus. Consumer surplus and producer surplus are both entirely determined by the interplay of the demand curve for the product in question (here, interactive music streaming) and the way the product is priced by the interactive streaming industry to its consumers. That is, regardless of the structure of the royalty payments, the ''size of the pie'' is determined by the unilateral decisions made by interactive streaming firms about their pricing to consumers.

Watt WRT ¶ 11.

Professor Watt also attempts to de-couple the upstream and downstream rate structures by analogizing interactive streaming to a retail restaurant offering of an ''all you can eat buffet.'' He concludes that a retailer, such as an interactive streaming service or a buffet restaurant, can pay for inputs (musical works or food) per-unit while still charging an up-front access fee ($9.99 per monthly subscription or $9.99 for a buffet meal). By this analogy, Professor Watt purports to demonstrate that interactive streaming services do not *require* non-unit royalty rates to serve their downstream listeners. *Id.* ¶ 12.

Professor Watt asserts that Spotify's claim that listeners to it ad-supported service do not pay a marginal positive price is inaccurate. He notes that listening to advertising that interrupts the music imposes a time-related/annoyance cost that the listeners must accept.[152] This suggests to Professor Watt that per-unit pricing (at least in a non-monetary manner) indeed is possible downstream. Id. ¶ 13.

Professor Watt further opines that any positive marginal cost pricing of songs by interactive streaming services on subscription plans necessarily would be offset by a reduction in the up-front subscription price. He suggests that this consequence would not necessarily be deleterious for the streaming service because ''[w]ith the reduction in the fixed fee (along with the positive per-unit price), it becomes entirely possible that consumers who were not initially in the market now find it to be in their interests to join the market, consuming positive amounts of streamed music where previously they consumed none.'' *Id.* ¶ 15.

In their affirmative case regarding Factor A, Copyright Owners argue that ''availability maximization'' should be considered through the lens of the creators, who seek high rates as a signal to spur creation and would see low rates as a disincentive.

In undertaking a Factor A evaluation, the Judges are cognizant of the double meaning of ''availability'' of creative works in a tiered market such as the music streaming business at issue in this proceeding. On the one (upstream) hand, maximizing availability of creative works might refer to encouraging artists to produce more prolifically. On the other (downstream) hand, maximizing availability might refer to encouraging more entry into the music streaming business to maximize options for end-users and, presumably expand the overall consumption of music. The Judges must weigh the impact of their rate decisions so as not to favor one interpretation of availability of creative works over the other.

With regard to the downstream market, the Judges find that Professor Marx's analysis of how a price discriminatory model maximizes availability is correct. Price discrimination not only serves low WTP listeners, but it also indirectly serves copyright owners, by incentivizing interactive streaming services to increase the total revenue that price discrimination enables. Any seller or licensor would prefer to maximize its revenue, and a rate structure that will effect such maximization thus would be the best structural inducement. For purposes of applying Factor A, a rate structure that better increases revenues, *ceteris paribus,* should induce more production of musical works, a result that Copyright Owners should desire.[153]

By contrast, to equate ''availability'' solely with a higher rate would produce, ultimately, a lower surplus. The Judges find that Copyright Owners have taken a cramped and unrealistic view of incentives created by price discrimination. Although a per-unit rate structure with higher royalty rates might have an immediate superficial appeal, the consequence will most assuredly be lower revenues both downstream and upstream.

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).

In sum, the Judges are persuaded that Professor Marx's analysis of Factor A is consistent with the purpose of that statutory objective and sound economic theory. An upstream rate structure based on monetizing downstream variable WTP will facilitate beneficial price discrimination. In turn, that price discrimination will allow for more affordable access ''down the demand curve,'' making musical works available to more members of the public. The rate structure determined by the Judges, in which both rate prongs monetize downstream variable WTP, satisfies Factor A.

Although largely anecdotal and unsupported by sophisticated surveys, studies, or economic theories, the uncontroverted evidence from songwriters and publishers should not go unheeded. That evidence points strongly to the need to increase royalty rates to ensure the continued viability of songwriting as a profession. The rate determined by the Judges represents a 44% increase over the current headline rate, and thus satisfies the Factor A objective in this respect as well.

### *B. Factors B and C: Fair Income and Returns and Consideration of the Parties' Relative Roles*

Factor B directs the Judges to set rates that ''afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions.'' Factor C, instructs the Judges to weigh ''the relative roles of the copyright owner and copyright user in the product made available to the public,'' across several dimensions. 17 U.S.C. 801(b)(1)(B), (C).

[152] The record does not address an assessment of the advertising interruption cost. Advertising in today's technological environment is often informative, especially when it is targeted to specific listeners, adding some measure of value, rather than cost, to the listener.

[153] This point appears to raise a question: How could Copyright Owners and their economic experts argue against a rate structure that inures to their benefit as well? The answer is: They do not. As stated supra, they advocate for a rate set under the bargaining room theory, through which mutually beneficial rate structures can still be negotiated, but not subject to the ''reasonable rate'' and itemized factor analysis required by law. In those negotiations, as Dr. Eisenach candidly acknowledged, Copyright Owners would have a different threat point to use in order to obtain better rates and terms.

Congress included Factors B and C in section 801(b)(1) to establish a legal standard for the Judges to use to move their determination of new rates for existing licenses beyond a strictly market-based analysis. In an attempt to pass constitutional muster, Congress crafted statutory language that paralleled public utility-style regulatory principles.[154] According to 1967 Congressional testimony, these principles were ill-suited for setting rates that equitably divided compensation for the ''relative roles'' of licensors and licensees in order to provide a ''fair'' outcome.[155] However, as the parties' economic experts make clear in their approaches to Factors B and C in this proceeding, the discipline of economics has evolved since Mr. Nathan criticized as economically impossible any regulatory attempt to equitably divide creative contributions.[156]

In the present proceeding, the parties' economic experts agreed on the propriety of joint consideration of Factors B and C either through a Shapley value analysis or an analysis ''inspired'' by the Shapley valuation approach.[157] *See* Marx WDT ¶¶ 11–2 (considering ''a 'fair return' according to . . . relative contributions (factors B and C)'' because of the use of ''[a]n economic interpretation of factors B and C . . . a commonly used economic approach, the Shapley value, which . . . operationalizes the concept of fair return based on relative contributions.''); Watt WRT ¶ 22 (''I agree with Dr. Marx's assertion that the Shapley model is a very appropriate methodology for finding a rate that satisfies factors B and C of 801(b); *see also* Gans WDT ¶¶ 65 n. 35, 67 (noting the Shapley approach provides for a ''fair allocation'' as among input suppliers to reflect ''the contributions made by each party.''). The Judges concur with this joint analysis.

The Judges used Shapley analyses to derive royalty rates in this Determination, and discussed the experts' respective Shapley (or Shapley-inspired) models in that context.[158] To summarize briefly, Professors Marx, Gans, and Watt's analyses all produced a lower ratio of sound record to musical work royalties than exists under current conditions, implying that a fair allocation of surplus between those two groups would be more even than under the current market structure. Professors Marx's and Watt's Shapley analyses also pointed to a lower overall percentage of service revenue being directed to copyright royalties than exists under the current rate structure. Due, in part, to her decision to design the model to equalize bargaining power between copyright owners and users, Professor Marx's model produced lower overall royalties for copyright owners than Professor Watt's model.

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.[159] The Judges find that these rates are consistent with the experts' analyses and constitute a fair allocation of revenue between copyright owners and services. The Judges' analysis with regard to Factors B and C demonstrates (whether that analysis was undertaken as part of the reasonable rate analysis or as a separate analysis), that there is no basis to depart from the Judges' determination of the reasonable rate structure and rates as set forth *supra.*

### *C. Factor D: Avoidance of Disruption*

The last itemized factor of section 801(b)(1) directs the Judges ''to minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.'' 17 U.S.C. 801(b)(1)(D). In *Phonorecords I,* 74 FR at 4525, the Judges reiterated their understanding of Factor D, concluding that a rate would need adjustment under Factor D if that rate

> directly produces an adverse impact that is substantial, immediate and irreversible in the short-run because there is insufficient time for either [party] to adequately adapt to the changed circumstance produced by the rate change and, as a consequence, such adverse impacts threaten the viability of the music delivery service currently offered to consumers under this license.

*Id.* The Judges adopt and apply in this Determination the same Factor D test.

Copyright Owners and Apple advocate a complete abandonment of the current rate structure. The upshot of each proposal is a dramatic swing in royalties: Increases under Copyright Owners' proposal and decreases under Apple's proposal. For all the reasons detailed in this Determination, the Judges do not adopt either of the per-unit rate structures these parties advocate. The Judges decline to make the requested changes in rate structure not because the structure is different and unfamiliar, but because of the dramatic, disruptive effects of the proposed per-unit rate structures.

The Services advocate essentially the rate structure that now exists. *See* SJPFF at 1. The Judges' proposed rate structure adopts some attributes of the existing rate structure, incorporating the economically reasonable features and abandoning unsupported features that unduly fracture and complicate the rate structure.

The record shows that interactive streaming services are failing to realize an accounting profit under the current structure and nothing the Judges do in this proceeding will change the Services' business models to change that circumstance.[160] The Services remain in business and new streaming services enter the market despite the existence of

[154] Public utility-style regulation, especially in 1967 when Congress was working on copyright reform legislation, was classic rate-of-return regulation. Essentially, the regulator would establish the utility's costs and determine the rate charged to customers (or rates charged to different customers), sufficient to provide the utility with a reasonable rate of return. *See generally* Decker, Modern Economic Regulation at 104 (2014).

[155] *See* Hearing on S. 597, Subcomm. on Patents, Trademarks and Copyrights of the S. Committee on the Judiciary (Mar. 20–21, 1967).

[156] Economics experts in the present proceeding for both Copyright Owners and the Services acknowledge that microeconomic principles (pre-Shapley values) do not provide insights as to what constitutes ''fairness.'' *See, e.g.,* 3/30/17 Tr. 3991 (Gans) (''fairness . . . is not a topic that is sitting in an economics textbook somewhere.''); 3/20/17 Tr. 1830 (Marx) (''Fairness is not a notion that has a unique definition within economics.''); 1128–29 (Leonard) (''economists . . . typically don't do 'fair' ''); 4/13/17 Tr. 5919 (Hubbard) (''Economists aren't philosophers. I can't go to the biggest picture meaning of 'fair'. . . .''). Rather, economists attempt to identify *ex ante* ''fairness'' by identifying fair *processes* in the workings of and structure of markets, in bargaining, and in the efficiency of outcomes generated by these processes, although their understanding of what constitutes a fair ''process'' varies. *See, e.g.* 3/13/17 Tr. 555 (Katz) (''[T]he most useful or practical way of thinking about it here was really to focus on whether the process is fair'' . . . [and] a conception that's often used in economics is that a process is fair if it's . . . competitive or the outcome of a competitive market. A competitive bargaining process is fair. And so that's the—the central notion of fairness that I used here.''); 3/15/17 Tr. 1129 (Leonard) (''My concept of fair . . . and what I think a lot of economists would say is that if you have . . . a negotiation between two parties and there are no . . . constraints such as holdup . . . and there's no market power . . . again I hesitate to use the word, so maybe I'll put it in quotes, would be fair.); Eisenach WDT ¶ 24 (''a rate set at the fair market value by definition provides fair returns and incomes to both the licensee and licensor.'')

[157] The Shapley approach, named for Nobel Memorial Prize winner Dr. Lloyd Shapley, represents a method for identifying fair outcomes, previously unaddressed in microeconomics. Congress did not apply the Shapley value approach, perhaps because this methodology, although developed in 1953, was not yet widespread in the economic literature in 1967.

[158] See supra, section V.D.1.

[159] See supra, section V.D.2.

[160] It is likely the Services have made and will make business decisions that defer accounting profits. The Judges' approach offers no criticism of the Services' business decisions; rather, the Judges attempt to assure a structure that permits the Services' competitive tactics without penalizing the creators of the works they exploit.

chronic accounting losses. The Services' inability to become profitable will persist based on the record, under existing competitive conditions. As Mr. Pakman testified: [N]o current music subscription service—including marquee brands like Pandora, Spotify and Rhapsody—can ever be profitable, even if they execute perfectly. . . .'' Testimony of David B. Pakman, Trial Ex. 696, ¶ 23 n.5 (citation omitted) (Pakman WDT). Although Mr. Pakman blames the lack of profitability (in part) on the level of mechanical royalties, the Judges find, based on the Services' own acknowledgement, that the lack of profitability is a function of a lack of scale (which is another way of indicating that market share is divided among too many competing interactive streaming services). *Id.* Lowering mechanical royalties to provide the Services profitability, in the face of the acknowledged problem of a lack of scale, would constitute an unwarranted subsidy to these services at the expense of Copyright Owners.[161]

Although the Services have indicated their ability to withstand short-term losses as they compete for scale/market share, the record also indicates that there is a limit to such losses, however imprecise and unknown, beyond which services will be unable to attract capital and survive until the long run market dénouement. As Dr. Leonard testified, ''[REDACTED] is relevant and suggests [REDACTED].'' Leonard AWDT ¶ 101 n.151. This testimony reflects the well-understood principle that ''[t]here is no specific time period . . . that separates the short run from the long run.'' R. Pindyck & D. Rubinfeld, *Microeconomics* at 190 (6th ed. 2005). Thus, although the Services appear able to withstand current rates, a rate increase of the magnitude sought by Copyright Owners would run the very real risk of preventing the services from surviving the ''short-run,'' threatening the type of disruption Factor D is intended to prevent.

While the reasonable rate determined by the Judges does not present the same risk of disruption as the rates sought by the Copyright Owners, it does represent a not insubstantial increase of approximately 44% over the current headline rate. In order to mitigate the risk of short-term market disruption, and to afford the services sufficient opportunity ''to adequately adapt to the changed circumstance produced by the rate change,'' the Judges will phase in the new rate in equal annual increments over the rate period. Thus, the rates for the 2018–2022 rate period shall be the greater of the percent of revenue and percent of TCC rates in the following table:

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|
| Percent of Revenue | 11.4 | 12.3 | 13.3 | 14.2 | 15.1 |
| Percent of TCC | 22.0 | 23.1 | 24.1 | 25.2 | 26.2 |

The Judges' rate structure continues to produce an All-In rate, from which the portion for the mechanical rights is derived. The two rights are perfect complements. Without sufficient evidence to establish independent respective values, any attempt to segregate the two could result in disruptive unintended consequences. In the rate structure the Judges adopt, they attempt to ensure that no one of the myriad licenses required for the public to enjoy broadcast music swallows up payment for any other license.

**VII. Terms**

Before enactment of the Copyright Royalty and Distribution Reform Act of 2004, the Register held exclusive authority to set terms for use of the section 115 compulsory license(s). In the 2004 Act, Congress gave the Judges authority to set ''reasonable rates and terms of royalty payments'' for section 115 licenses, as well as terms establishing ''requirements by which copyright owners may receive reasonable notice of the use of their works under . . . section [115], and under which records of such use shall be kept and made available. . . . '' *See* 17 U.S.C. 115(c)(3)(D), 801(b)(1). The Register retained authority to regulate ''notice of intention to obtain the section 115 license and requirements regarding monthly payment and monthly and annual statements of account. . . .'' *See* Final Order, Division of Authority Between the Copyright Royalty Judges and the Register of Copyrights under Section 115 Statutory License, 73 FR 48396, 48397 (Aug. 19, 2008) (*Register's Rulemaking Opinion*). In adopting terms, the Judges may adopt ''additional terms 'necessary to effectively implement the statutory license.' '' *Id.* at 48398. In this Determination the Judges' cleave to the division of authority between them and the Register, declining to adopt terms any of the participants proposed that might impinge on the Register's authority.

The extant regulations for the section 115 license have developed over time. Participants in prior proceedings crafted the regulations to codify the structure and terms of their settlements. The most recent regulatory amendment occurred in November 2017, when record labels and Copyright Owners negotiated a settlement relating to the use of musical works embodied in physical phonorecords, permanent digital downloads and ringtones, the so-called ''subpart A'' configurations.

With the Judges' determination to change section 115 rate structures and to realign service offerings for rate purposes, the regulatory terms must likewise change. Further, beginning in 2013–14 with the *Web IV* determination, the Judges launched an initiative to simplify copyright royalty regulations, by eliminating duplication and, to the extent possible, using plain English. The regulations codifying the terms of the present determination are no exception. To standardize the part 385 regulations, the Judges begin with a reorganization that consolidates all regulations of general application in a new subpart A.

In this Determination, it is not the Judges' intention to change the agreed terms for extant subpart A. The Judges do, however, move some of the agreed subpart A regulations to the new subpart A regulations of general application. Further, given the changes in rate structures effected by this determination, the Judges now include Music Bundle configurations in the same regulatory category as the constituent parts of the music bundle, *viz.,* physical phonorecords, permanent digital downloads, and ringtones.

[161] Copyright Owners argue that the services could attempt to cut their non-content costs in order to remain sustainable. They suggest that the services emulate Sirius XM, which successfully reduced its non-content costs as a percent of revenue. *See* Rysman WDT ¶¶ 98–100. However, as Spotify's CFO, Mr. McCarthy notes, Sirius and XM (the pre-merger predecessors to Sirius XM) ''nearly bankrupted themselves and merged in order to survive.'' McCarthy WRT ¶ 42. Moreover, not only were Sirius XM's content costs lower as a percent of revenue, but also its ''costs declined as a percentage of revenue *as they grew their subscriber base.* . . . Their costs declined as they achieved scale.'' *Id.* Once again, the necessity of scale remains paramount.

Regulations specific to physical phonorecords, PDDs, and ringtones adopted by agreement together with regulations specific to Music Bundles will now appear in subpart B.

New subpart C includes all streaming service offerings that are revenue bearing, including offerings that the Services market at discounted prices, such as annual subscriptions, family plans, or student plans. Regulations for promotional streams and service offerings for which the Licensee receives no consideration and that are free to the end-user are contained in subpart D.

*A. Definitions*

1. Service Revenue

Participants in the present proceeding disagree on the definition of Service Revenue to be used in setting a base for application of the percent of revenue prong in the greater-of rate structure. Copyright Owners' proposed per-unit rate structure obviates the need for a Service Revenue definition; consequently it does not include one.

Pandora seeks an express exclusion of revenue from a Services' products outside the purview of the section 115 license, *e.g.,* Pandora's linked concert ticket sales app, TicketFly. Pandora PFF 84. Pandora also seeks to expand the current deduction from gross revenues for the costs associated with producing advertising revenue by permitting a similar deduction for such costs of doing business as credit card fees, app store fees, and carrier service billings. *Id.* PFF 85; *see* Herring WDT ¶ 63. Interestingly, Amazon joins in this request even though Amazon [REDACTED]. *See* Amazon PFF ¶ 107 (and record citations therein).

For the Judges, it is almost axiomatic that revenues from product offerings unrelated to the section 115 license should not be included in the revenue base for calculation of section 115 royalties. On the other hand, the section 115 revenues should not be diminished by such costs of doing business as paying app store and carrier service fees and commissions or credit card fees. The Judges will retain the cost-of-revenue-production deduction for marketing to create advertising revenue but decline to deduct other administrative costs from the revenue base.

Amazon and Pandora also ask for adjustments to per-subscriber calculations to accommodate discounted service offerings, such as discounted annual subscriptions, family plans, and student accounts. *See, e.g.,* Amazon PCL ¶¶ 36–39; Pandora PFF ¶ 83. The rationale offered by the Services is that discounts for a family group or for a student build the ultimate customer base, by orienting the discounted service users to their particular formatting and increasing user comfort and convenience. *Id.* Copyright Owners urge the Judges to require the Services to pay the same royalty rate for discounted offerings as they pay for full-price subscription offerings.

Relying on their rationale for choosing a percent-of-revenue rate structure rather than a per-unit rate structure, the Judges recognize that the Services are, to some extent, focusing more on growth of market share than growth of revenue. 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.

2. Fraudulent Streams

Apple, Google, Pandora, and Spotify seek inclusion of a definition of ''fraudulent streams'' in the section 115 regulations to avoid royalty payments for them. Google proposes defining a fraudulent stream in terms of the origin of the request with an alternative quantitative limitation. *See* Google Inc.'s Amended Proposed Rates and Terms at 3. Spotify combines the two criteria. *See* Spotify's PFF/PCL at 115. Apple revised its original quantitative definition to a reasonableness determination delegated to the Service. *See* Apple Inc. Proposed Rates and Terms at 2.

In light of technological developments that permit non-human streaming of sound recordings for purposes other than consumer listening, the Judges concur that these non-consumer streams should not be counted in determining the allocation of royalties. Accordingly, a definition of Fraudulent Stream is appropriate. The Judges conclude that the definition should establish a quantitative measure, removing the subjective determinations of the various Services from the equation.

3. Royalty-Bearing Streams

Apple led the Services in asking for a definition of ''Play'' that eliminates from any per-play calculation a stream lasting fewer than 30 seconds. Apple contends including these partial plays are not indicative of true consumer demand. *See* Ghose WDT ¶¶ 54, 60. Mr. Vogel, testifying for Spotify asserted that counting streams of under 30 seconds affords a substantial windfall to Copyright Owners. Written Rebuttal Testimony of Paul Vogel, Trial Ex. 1068, ¶ ¶ 39–40 (Vogel WRT). Pandora and Spotify join in the request to add a 30-second threshold to the definition of ''Play.'' Apple contends that the time threshold is a feature of [REDACTED]. Apple PFF ¶ 240. Copyright Owners argue against the proposal arguing that the definition for section 115 should align with that adopted for noninteractive streaming licenses under section 114.

The Judges' rate structure in this proceeding does not stand on a per-play base. Nonetheless, the section 115 regulations must clarify that allocation of mechanical royalties is based on the relative number of plays of a Copyright Owners' works. Copyright Owners advocate for a per-unit rate structure that reflects demand. The Judges cannot find that a partial play of a work signifies consumer demand; in fact, a skip-though might indicate just the opposite consumer conclusion. The Judges adopt the definition of ''Play'' that exempts streams of under 30 seconds for tracks that are, in their entirety longer than 30 seconds.

4. Pass-Through Licenses

The extant regulations provide alternative measures in the calculus for finding the greater-of all-in royalty pool or, in some instances, the measure of the lesser-of prong to be used to determine the greater-of royalty pool. The difference is in the percent-of-TCC depending on whether the record company's licenses are ''pass-through'' or not. The parties offered minimal evidence on the topic. Pandora proposed to eliminate the distinction as ''unnecessary.'' Pandora PFF ¶ 79. Pandora's conclusion is consistent with Professor Eisenach's observation that the pass-through rate is rarely used. Eisenach WDT ¶ 82 n.67.

The Judges find the separate pass-through TCC rate is unnecessary and decline to include one in the regulations.

*B. Offerings*

1. Limited Downloads and Interactive Streaming

The Judges do not alter definitions identifying Limited Downloads and Interactive Streaming, as the settling parties defined those service offerings in the 2012 Settlement. The Judges do, however, add other offering configurations to those configurations to enlarge the rate category.

2. Mixed Bundles

In the current regulations based on the 2012 Settlement, mixed service bundles regulated in current subpart C and are differentiated from music bundles in the same subpart. *Compare* 37 CFR 385.21 (definition of ''mixed service bundle'') *with id.* (definition of ''music bundle'').[162] The rate structures for the two bundle types, with one exception, and the rates for the two bundle types are identical. The difference between the bundle calculations occurs at the final step, allocation of the payable royalty pool. For mixed service bundles, the payable royalty pool is allocated to musical works rightsholders on the basis of relative number of plays. For music bundles, which include up to three service configurations, the payable royalty pool is subdivided by configuration (CD, PDD, ringtone) and the per-play allocation is calculated for each configuration separately.

Copyright Owners proposed combining regulations for mixed bundle offerings with the regulations for their component parts. The Judges conclude that the differences in kind between mixed offerings including streaming and a mixed music offering including only currently regulated configurations are sufficient to separate them. Mixed bundles will be subject to the streaming rate structure, with allocation allowed based on the relative values of music streaming and any other bundled offering.

3. Music Bundles

The Judges now include Music Bundles with the regulations adopted for physical phonorecords, permanent downloads, and ringtones—the three potential components of a ''music bundle.'' Each separate offering within the bundled configuration shall be subject to the rate agreed by the parties that proposed the subpart A settlement, as applicable to that component part.

4. Lockers

In the existing regulations, Paid Locker Services and Purchased Content Locker Services are both royalty-bearing configurations. In the present proceeding, the only evidence regarding locker services was expository. To the extent Services offered a purchased content locker service, the evidence was that those Services are exiting the arena. For example, Apple described its Purchased Content Locker Service as a non-remunerative service that it is phasing out and no longer marketing. *See, e.g.,* Apple PCL 52.

For Purchased Content Locker Services that do not generate revenue for the Service, no royalty should accrue. For Paid Locker Services, a Service receives subscription payments[163] and subscription revenues for those offerings are part of the service revenue to which the percent-of-revenue calculation applies.

5. Family and Student Plans

The Judges adopt here a greater-of rate structure that measures a percent of service revenue against a percent of TCC. The basic rate calculations are straightforward. The Judges also adopt a Mechanical Floor for Offerings that currently have a Mechanical Floor alternative. In the present proceeding, the Judges adopt a Mechanical Floor for certain configurations. For purposes of determining that minimum rate, should the need ever arise, the parties ask for clarification regarding subscriber counts.

The Services presented evidence of three subscription variations: Discounted annual subscriptions, family subscriptions, and student subscriptions. A discounted annual subscription is no different from any subscription for purposes of calculating the per-subscriber minimum mechanical rate.

As an example, Spotify proposed, albeit for a different purpose in a different rate structure, that family accounts be treated as 1.5 subscribers per month and student accounts be treated as .5 subscriber per month. *See, e.g.,* Spotify Second Amended Proposed Rates and Terms at 16. Copyright Owners' rate proposal is based not on subscribers, but on end users, which they define to include any person who streams at least one play during an accounting period, apparently without regard to that user's subscription status.

For purposes of calculating a Mechanical Floor rate, the Judges adopt the Services' proposal, in the form articulated by Spotify. Family accounts are to be counted as 1.5 subscribers and student accounts are to be counted as .5 subscriber.

6. Unremunerated Offerings

No party in this proceeding offered evidence or argument against continuing the zero royalty rate for promotional streams, as they are defined in the regulations. The Judges accept the agreed definition in the extant regulations, with substantial editing to eliminate unnecessary complexity, and adopt the agreed zero rate for promotional streams.

In addition, the Judges include in the new subpart D regulations other offerings for which a Service receives no remuneration. Free trial subscriptions and purchased content locker services that are free to the user and not associated with any revenue (such as advertising revenue) bear a royalty rate of zero.

*C. Reporting and Auditing*

Among the areas open to the Judges for rulemaking are notice and recordkeeping, to the extent the Judges find it necessary to augment the Register's reporting rules. The Judges' regulations must be supported by record evidence and may include guidance on how payments are made and when, accounting practices, audits, and acceptable deductions from royalties. *See Register's Rulemaking Opinion* at 48398. With respect to the section 115 licenses, the Register's regulations address licensees' Notice of Intent to obtain a section 115 license, details of the licensees' monthly payments, and specifications for licensees' monthly and annual Statements of Account. *Id.* at 48397.

In the present proceeding, the parties' proposed terms by and large described rate structures and calculations of payable rates. Given the rate structure the Judges adopt, many of the parties' proposed terms are inapplicable. Some participants did propose rule changes that are appropriate even with the new rate structure and that would appropriately augment the Register's rules. In some instances, however, the parties' regulatory proposals are proffered as part of their legal argument but are not supported by factual evidence in the record.

The Judges include in the part 385 regulations provisions that augment the part 210 statement of information Services must record and retain with regard to promotional and trial streaming offerings. The Judges decline to adopt other changes to part 210 requested by Spotify. The Judges will forward those change requests to the Register of Copyrights for such consideration as the Register deems appropriate.

[162] ''Mixed service bundles'' are a product package that includes music access together with a non-music product, such as Internet services. A ''music bundle'' refers to packaging different music access configurations in a single music sale for a single price, such as authorizing a PDD with the purchase of a CD.

[163] The Judges heard no testimony regarding ad-supported locker services, but to the extent they exist, the conclusions for subscription paid locker services apply equally to ad-supported locker services.

*D. Late Fees*

The Act expressly authorizes the Judges to include in a determination ''terms with respect to late payment . . .'' provided the late payment terms in no way interfere with other rights or remedies of copyright holders. 17 U.S.C. 801(c)(7). In the extant regulations, only subpart A contains a provision for late fees. The Judges did not previously include late fee provisions in prior subparts B and C because the settling parties did not include those provisions. In the present proceeding, Copyright Owners asked the Judges to adopt late fee provisions for all royalty payments. Copyright Owners contend that adding the late fee provision to all section 115 royalties simply ''clarifies'' the intention of the parties that settled on rates and terms in 2012.

The Judges cannot divine the intentions or missed opportunities of parties not before them. On the other hand, the Judges are aware that section 115 establishes a royalty due date and assigns to the Register of Copyrights authority to develop regulations detailing payment procedures. *See* 17 U.S.C. 115(c)(5). Rate terms under other sections of the Act require licensees to pay a late fee, if warranted. The Judges see no reason for Copyright Owners to receive late fees for ''subpart A'' activities, but forego late fees for other licensed activities. A late fee provision is now included in the subpart containing regulations of general application and applies to all section 115 royalties.

*E. Part 210 Regulations*

The Register's rules are codified in part 210 of 37 CFR. The Judges decline to adopt proposed changes that encroach on the settled part 210 regulations. The Judges defer to the Copyright Office for terms that are the responsibility of and under the authority of the Register of Copyrights.

**VIII. Conclusion**

The section 115 phonorecords license has a long history. Application of the license has changed significantly as the methods of musical works delivery have evolved.[164] While the current market, increasingly dominated by digital streaming, cannot be characterized as immature, it cannot either be characterized as stable.

Determination of royalty rates and terms for the section 115 license is complex and arduous, and reasonable people can differ as to the best approach—as evidenced by the issuance of a dissenting opinion in this proceeding. Judge Strickler's dissent follows this majority opinion and the regulatory terms codifying the Determination are set out below this **SUPPLEMENTARY INFORMATION** section.

In this market, with the evidence before them, the Judges have attempted to establish royalty rates and terms that compensate songwriters and music publishers and offer to licensees appropriate returns and incentives for continued development. The rates and terms established in this Final Determination shall supplant existing rates and terms effective as of January 1, 2018.

The Register of Copyrights may review the Judges' Determination for legal error in resolving a material issue of substantive copyright law. The Librarian shall cause the Judges' Determination, and any correction thereto by the Register, to be published in the **Federal Register** no later than the conclusion of the 60-day review period.

Suzanne M. Barnett,
*Chief Copyright Royalty Judge.*

Jesse M. Feder,
*Copyright Royalty Judge.*

Dated: November 5, 2018

**DISSENTING OPINION OF COPYRIGHT ROYALTY JUDGE DAVID R. STRICKLER**

I respectfully dissent from the Majority Opinion, for the reasons set forth below.

**II. The Majority Opinion Lacks an Adequate Basis in the Record**

**A. The Rate Structure Adopted by the Majority was not proposed during the Proceeding.**

The Majority Opinion establishes an all-in rate and rate structure for performances and mechanical reproductions, equal to the greater of the percent of total service revenue and Total Content Cost (TCC), as set forth in the following table:

| | 2018 (percent) | 2019 (percent) | 2020 (percent) | 2021 (percent) | 2022 (percent) |
|---|---|---|---|---|---|
| Percent of Revenue | 11.4 | 12.3 | 13.3 | 14.2 | 15.1 |
| Percent of TCC[165] | 22.0 | 23.1 | 24.1 | 25.2 | 26.2 |

*See* Majority Opinion, *supra* at 1.[166]

The Majority does not deny that this rate structure was never proposed by any party *during* the proceeding. In fact, this rate structure was only proposed *after* the hearing, when the record had already been closed. More particularly, this rate structure was proposed post-hearing by Google, Inc. (Google) in an amended rate proposal, which Google supported in its Proposed Findings of Fact and Conclusions of Law (GPFF). *See* GPFF ¶ 4.[167] (However, the majority expressly asserts that, although they selected this rate structure after consideration of Google's post-hearing amended rate proposal, they ''did not rely'' on Google's post-hearing proposal. Majority Opinion at 37 n.39)

The fact that the two prongs in this rate structure were not combined as the only two parts of a rate structure proposed by any party *during the hearing* is critical. The gravamen of this proceeding was the issue of how to combine different proposed rate prongs (and discard others) in order to establish a rate structure that meets the statutory requirements that the structure be ''reasonable'' and that it address the four itemized statutory objectives. *See* 17 U.S.C. 801(b)(1). The majority has selected two rates that, although parts of

[164] Passage of the Hatch-Goodlatte Music Modernization Act (MMA) introduces further changes in the administration of the section 115 license. Under the MMA, the Register and the Judges are required to make sweeping changes to applicable regulations. Rather than attempt to adapt the regulations the Judges adopt based on the record before them in this proceeding, the Judges will engage in a notice and comment rulemaking procedure to conform all affected regulations to the provisions of the MMA.

[165] ''TCC'' is shorthand for ''Total Content Cost,'' the cryptic industry terminology used to measure royalties paid by interactive streaming services to music publishers for musical works, as a percent of these services' payment to record companies for sound recording licenses.

[166] As this Dissent was initially written, the Majority Opinion was not final and therefore the page citations had been left blank. Page numbers are now included.

[167] However, Google proposed rates that were well below the rates adopted by the majority. *See* GPFF ¶ 4 (proposing the greater of 10.5 percent of service revenue or 15 percent of TCC). In the event these rates are deemed too low by the Judges (as has occurred), Google requests that the Judges abandon this structure and adopt instead *the 2012 rate structure,* because that structure ''still adhere[s] to the Sec. 801(b) factors by setting sustainable, fair rates that would not disrupt the industry.'' *Id.* ¶ 8.

other proposals made during the proceeding, were never combined in this manner *during the hearing.* Because it is the *combination of rates* that is crucial, the majority erred by plucking two rates from the record, combining them post-hearing, and then wrongly declaring that this ''mash-up'' was actually based on the record.

Copyright Owners filed a post-hearing submission that calls these matters to the Judges' attention, in connection with Google's identical rate structure contained in its amended rate proposal submitted after the record had closed.[168] *Copyright Owners' Reply to Google's Proposed Findings of Fact and Conclusions of Law* (CORPFF-Google). In their submission, Copyright Owners correctly noted the absence of an evidentiary record to support the combination of a percent-of-revenue rate and a TCC rate. *See* CORPFF-Google at p. 2 (''Google's new proposal is not only unsupported by any evidence, it is divorced from the evidence in the record [and] neither Dr. Leonard [Google's expert witness] nor any other expert opined on the new proposal, let alone provide a basis for assessing its reasonableness.''). As a substantive matter, Copyright Owners describe this mix-and-match rate structure as a Frankenstein's Monster. *Id.* at pp. 2, 17. Using a different analogy, they argue that this jury rigged rate structure is nothing more than an unlitigated, post-hearing selection of one rate from ''Column A'' and another from ''Column B.'' *Id.* at p. 15.

Because this particular rate structure was not proffered at the hearing, the parties had no ability to mount a challenge to it during the proceeding. The statute and the Judges' regulations set forth in detail how the parties must present evidence, testimony and arguments. See 17 U.S.C. 803(b)(6); 37 CFR 351.1 through 351.15. At the hearing in this proceeding (as in all rate proceedings), the parties submitted detailed written testimonies, engaged in extensive direct and cross-examination of witnesses, including expert economic witnesses, who supported and attacked the rate proposals made a part of the record. It must come as quite a shock when, after all that testimony, evidence and analysis has been presented, the majority decides to ignore the parties' rate proposals presented at the hearing and create a new combination that no party had presented. I do not think the majority can overcome this problem by relying on the fact that the two elements of the majority's new rate structure appeared in different rate proposals, because, again, the key issue in this proceeding was how to establish a rate structure that combined various rate prongs.

This shock to the parties is not speculative, and the inappropriateness of using an amended rate proposal to inject untested rate structures was clearly articulated by Copyright Owners' counsel at oral argument. As counsel explained:

> [Google] decided it would be a good idea to give you something simple. . . . I agree that they are allowed to change their proposal, but when I talk about the inability to address all the depth, no one has been able to analyze it. They haven't run numbers, right? There are no forecasts for this proposal. [N]o one has been able to test out what this proposal would do. So that's why I say it is difficult to address it all because we weren't given an opportunity to have our experts test out the structure.

6/7/17 Tr. 6275–76 (Copyright Owners' Closing Argument).

The majority's error in creating and adopting its own rate structure (identical in structure to Google's post-hearing structure) has created a real risk of economic harm that the parties were not able to address at the hearing. As discussed below, this risk of harm extends not only to Copyright Owners, but also to the interactive streaming services, a fact acknowledged by Google, the proponent of this rate structure, as explained below.

**B. The Majority Opinion Causes Injury to Licensees and Licensors**

**1. Injury to Licensees (the Services)**

The crucial aspect of the majority's rate structure, absent from any rate proposal presented at the hearing, is the use of an uncapped TCC prong in a greater of rate structure. Because the TCC prong will be triggered when it is greater than the percent-of-revenue prong, the mechanical royalty rate will be determined by reference to whatever rate has been established by the record companies for sound recording royalties. However, it is undisputed that the record companies, by statutory design, have the unfettered legal ability to set their sound recording royalty rates, allowing them to exercise their economic power to demand rates that embody their ''complementary oligopoly'' status, as previously described by the Judges. *See Web IV,* 81 FR 26316, 26333–34 (May 2, 2016). Accordingly, whenever the record companies demand and obtain a higher sound recording royalty rate, under the majority's rate structure, the services' section 115 mechanical royalty rate *must increase as well.*[169]

Although it proposed such a structure, Google candidly identified this exact risk arising from an uncapped TCC. Specifically, Google acknowledged:

> Having no cap on TCC . . . leaves the services exposed to the labels' market power, and would warrant close watching if adopted . . . .

Google PFF ¶ 73 (emphasis added). But obvious and crucial questions arise: *Who* would do the ''watching''? *When* would such watching occur? Congress directed the Judges to be the ''watchers,'' and Congress instructed that the ''watching'' should occur only through rate proceedings, scheduled at specified intervals. The majority has not adequately addressed Google's candid warning as to the risk of an uncapped TCC, to the extent it has even addressed the issue at all.

The injury to the services from the majority's uncapped TCC rate structure is easily demonstrated. For example, as discussed *infra,* the unregulated sound recording royalty rate charged to interactive streaming now ranges from approximately [REDACTED] % TO [REDACTED] % of total service revenue. With a TCC of 26.2% (the majority's TCC rate in 2022) the TCC prong would equal as much as [REDACTED] % (*i.e.,* [REDACTED]). However, if the unregulated record companies demanded 70% of revenue as sound recording royalty payments, the mechanical rate would then rise to 18.34% (*i.e.,* $.70 \times .262$). This would be a [REDACTED] % increase in the mechanical rate, arising from the exercise of the absolute discretion and self-interest of the record companies. Moreover, the total royalty cost to the service paying these royalties would be [REDACTED] %, leaving the service with only [REDACTED] % of revenue to fund the rest of its operations.

It is important to distinguish the TCC rate in the 2012 benchmark, advocated in this Dissent, with the TCC rate in the Majority Opinion. Under the 2012 benchmark, the TCC is capped in a ''lesser of'' prong, such that, if the prong in which the TCC is set forth should be

[168] A party is entitled to ''revise its . . . requested rate at any time during the proceeding up to, and including, the filing of the proposed findings of fact and conclusions of law.'' 37 CFR 351.4(b)(3). However, nothing in the regulations permits the amendment to create a new rate structure that was not supported by the evidence at the hearing. Otherwise, a party could subvert the entire adversarial process by inserting a new proposal after the record had closed.

[169] Tying the section 115 mechanical license royalty to another rate is analogous to what a country does when it adopts a ''currency board,'' giving up its own sovereignty over the value of its currency by tying it to the value of another currency. Here, the majority has relinquished its ''sovereignty'' over the setting of rates over the five year rate term, 2018–2022.

triggered, it generally cannot exceed a specified per-subscriber rate, thus placing a limit on the reliance on the effect of the record companies' market power. *See, e.g.,* 37 CFR 385.13(a)(2) and (3). This has been a tradeoff the services have been willing to accept, because they have agreed to settlements in 2008 and again in 2012 incorporating this constrained use of TCC. However, they never accepted a complete deferral to the sound recording rate as an uncapped measure of the mechanical rate for all tiers of service.

The majority apparently responds to this problem of record company influence and market power with a figurative shrug. First, the majority concedes that Google's expressed concern is ''*true,*'' but irrelevant, because the record companies could put the services out of business with high rates at any time, even without the imposition of the TCC prong. Majority Opinion, *supra* at 35 n. 75. But this point ignores the fact that, at present, the record companies do not have to be concerned with a reduction of their royalties because of the linking of those royalties to the mechanical license royalties. That is new and, as explained *infra,* the record companies may decide to keep their rates high despite the increase in mechanical rates, or decide it is in their interest to avoid a reduction in royalty revenue by creating a completely different paradigm for streaming, by which the record companies move the streaming service in-house and effectively destroy the existing services. Is this speculative? Of course it is, but *that is precisely the problem.* As Copyright Owners' counsel stated in closing argument, and as Google intimated in its post-hearing filing, the potential impact of the record companies' responses to such a rate structure, given their market power, needed to be tested at the hearing, which, of course, it was not.

Then, in what may reasonably be characterized as a combination of naiveté and wishful thinking, the majority notes that the parties simply ''must . . . trust in the rational self-interest of the market participants.'' *Id.* at 36 n.75. But Congress delegated the authority to set mechanical royalty rates to the Judges and, as noted in both the Majority Opinion and this Dissent, the section 801(b)(1) standards and objectives are not to be determined simply by reference to the market, let alone by a referral to a market actor economically adverse to the parties in this proceeding.[170]

[170] It may be the case that sound recording rights and the musical works rights should be placed on an equal regulatory (or deregulatory) footing. However, that is the role of Congress, not the Judges, and the Judges cannot fix the disparity in the regulatory structure by simply ceding to the record companies the power to set mechanical royalty rates (And even if the Judges could accomplish this, they certainly could not do so absent a record, and after the record had closed).

**2. Injury to Licensors (Copyright Owners)**

The Majority Opinion's rate structure would jeopardize Copyright Owners as well, as they note in their post-hearing filing in response to Google. In that reply, Copyright Owners take note of the new risks—*unaddressed at the hearing*—that they would face under such a structure:

—record companies could acquire the streaming services, and then set low internal sound recording royalty rates (transfer prices) that would amount to ''sweetheart'' deals intended to diminish the royalties paid to Copyright Owners;
—services could start their own record companies, and then engage in the same transfer pricing/''sweetheart'' deals that include low sound recording royalties;
—record companies could grant sound recording licenses in exchange for equity interests in services (short of outright acquisition) and then agree to accept lower royalty rates than would exist in the absence of the equity payments, thus reducing mechanical license royalties.

CORPFF-Google at pp. 2–3, 24, 40, 44.

Also of great importance to Copyright Owners, a rate structure limited to a percent of revenue or a TCC rate does nothing to protect Copyright Owners from the potential displacement, deferment, bundling or attribution indeterminacy of a revenue-based structure. That is, even a TCC prong is a revenue-based prong, but under that prong the task of calculating ''revenue'' is delegated to the record companies, over whom the Judges have no control.

Google claims that its proposed structure (and, by extension, the majority's structure) does protect against the problems that can arise under a revenue-based royalty. GPFF ¶¶ 67, 72 (''Because record labels will always protect their own interest, this prong ensures that, through that process, they also protect the interest of Copyright Owners . . . . Today, Copyright Owners still recognize the virtue of the TCC structure in protecting their interest . . . .'').

However, Copyright Owners rightly note that they obtain no legal protection under such a TCC prong. In making this argument regarding displacement and deferral of revenue, Copyright Owners lay out comprehensively *all the problems* inherent in an uncapped TC prong set in a greater of rate structure, such as adopted in the majority opinion:

> The notion that Google's TCC prong will provide protection from revenue gaming, deferral and displacement, and other revenue prong problems is unsupported and speculative. Relying on just the TCC to solve those admitted problems leaves the Copyright Owners' protection from such problems entirely outside the statute . . . . [REDACTED] are what protects the Copyright Owners from price-slashing by the services. What is left unanswered . . . is . . . how can it be reasonable to ask the Judges to set a rate that does not itself provide for a fair return . . . but simply puts the Copyright Owners' fair return in the hands of the labels to negotiate terms that will adequately protect the publishers and songwriters as well? The labels do not have a mandate to ensure that the Services provide a fair return to the Copyright Owners, and cannot be directed to ensure such. Indeed, labels may not have the same incentives as songwriters and publishers to negotiate such protections in their deals. To wit, a label could make an agreement with a service that includes only a revenue prong in exchange for equity or some other consideration that it may never include in the applicable revenue subject to the TCC. . . . [W]hat if Google purchased one or more record labels and did not have to pay any label royalties? Or what if Spotify chose to avail itself of the compulsory license to create its own master recordings embodying musical works—which it is already doing [COPFF ¶ 396]—and chose to compensate itself for its use of the master recordings on a sweetheart basis (or not at all)? Or what if one or more labels decided to enter the interactive streaming market and did not have to pay themselves royalties? In each case, the Copyright Owners' protection—the protection that the Services admit the Copyright Owners need and is provided by the TCC—would be gone.

CORPFF-Google at 39–41 (emphasis in original).

I cannot improve upon Copyright Owners' statement of the problems they face from an uncapped TCC rate prong in a greater of structure.

The majority however dismisses this argument, stating (as noted *supra*) that they do not rely on ''Google's revised rate proposal.'' Majority Opinion at 37 n.39. However, that response misses the point: Google's argument is the same as the majority's argument with regard to rate structure. Because one is deficient as a consequence of not having been not presented and tested at the hearing—failing to afford the parties the ability to cross-examine witnesses and present a rebuttal case—then the other is deficient as well.

**C. The Majority Misunderstands the Record**

The majority pins its novel rate structure not on any party's proposals, but rather on the direct mechanical license agreements entered into [REDACTED] and a single license entered into by a non-participant and peripheral licensee, Microsoft.[171] *See Majority Opinion, supra,* at 34. However, the majority recognizes that many other interactive streaming agreements with music publishers contain different rate structures, including the rate structure consistent with the 2012 benchmark. *Id.*

But the majority's rationale for relying on the [REDACTED] (and Microsoft) agreements to support its rate structure is bewildering. The majority, relying on the testimony of Dr. Leonard, writes that the ''marketplace supports a number of rate structures and that no single structure or element of a structure is indispensable.'' *Id.* at 34. The majority's reliance on this point is bewildering because it (rightly) praises a market with *multiple* rate structures as support for its adoption of *a single rate structure.* This makes no sense.

Moreover, the ''marketplace'' of which the majority speaks so approvingly is not an unregulated market. Rather, it is a ''marketplace'' that has flourished for a decade, as discussed *infra* in this Dissent, *while the 2012 benchmark (and its fundamentally identical economic antecedent, the 2008 rate structure) were in place.* It is this regulated ''marketplace,'' with its multi-tiered rate structure, that has enabled creation of the multiplicity of rates that the majority lauds. Unwittingly the majority has adopted the perverse notion that ''no good deed goes unpunished,'' by relying on the benefits of the 2012 benchmark as a basis to eliminate it! Perhaps the more appropriate adage to follow should be: ''If it ain't broke, don't fix it.'' [172]

**D. The Majority Makes the Heroic Assumption that the Major Record Companies will Docilely Accept Millions of Dollars in Lost Revenue, by Agreeing to Accept Lower Sound Recording Royalties**

The majority is sanguine as to the impact of the uncapped TCC prong rate in its proposed rate structure, because it has confidence that the major record companies will recognize that they have no choice but to decrease their royalty rates and reduce their revenues by millions of dollars, in order to subsidize the section 115 royalty rate increases adopted in the Majority Opinion. The complacency of the majority is based on the application of the Shapley value approaches modeled by experts for the services and for Copyright Owners.

To summarize,[173] the Shapley models estimate a ''surplus'' of revenue from downstream revenues, after all the non-content costs of the market participants are recovered, that is available to be distributed among the services and the input providers, *i.e.,* the record companies (who provide the sound recordings) and the music publishers (who provide the music works). The division of that surplus is determined by an algorithm that measures and averages the value of each party's contribution to the creation of the surplus, over all possible arrival sequences in the marketplace.

As the majority correctly notes, the parties' Shapley value models all predict that the ratio of sound recording royalties to musical works royalties should decrease from current levels. However, the majority is merely *assuming* that the sound recording rates will adjust downward. They base their assumption on the testimony of Professor Watt, who identified what another economic witness (Professor Katz, for Pandora) described as the ''see-saw'' effect. Simply put, this effect arises from the *assumption* that the interactive streaming services must be permitted to retain enough revenue to survive,[174] but, beyond that, the suppliers of the two ''must have'' inputs can negotiate in a free market to share *equally* the remainder of the surplus generated by downstream revenue. (They receive different percentages of total revenue because, although their share of the Shapley surplus is equal, they have different non-content costs).[175]

In this see-saw paradigm, the present ratio of sound recording: musical works royalties is too high at present, according to the Shapley valuations, because the mechanical royalty has been set under section 115 at too low a rate, allowing the record companies to appropriate the remainder of the surplus, *i.e.,* more than the percentage suggested by the Shapley approach. According to the majority and the Shapley experts, applying the Shapley values would eliminate this regulatory effect and, the ratio of sound recording royalties to musical works royalties theoretically then should fall, with the fall in the ratio arising from *a significant reduction in sound recording royalties and an increase in musical works rates.*

But theory must meet reality. As I note in greater detail *infra* in connection with my own analysis of the Shapley approach, no witness could state whether this see-saw effect would occur, and there were no witnesses from the record companies who testified that the record companies would impotently acquiesce to a significant loss in royalties to accommodate the diversion of a huge economic surplus away from them and to the Copyright Owners.[176]

I am unwilling to adopt the hypothetically plausible idea of a see-saw effect impacting the division of this surplus, when there is simply no evidence that such an adjustment would occur. Given the $1.604 billion in interactive streaming revenue reported by RIAA, I cannot merely assume that the record companies would acquiesce to a substantial reduction in royalty revenue, rather than seek some other market structure in which to protect this revenue, such as, for example, resurrecting the idea of establishing or otherwise integrating their own streaming services. The Services' experts, and Apple's expert, testified that any purported see-saw effect was indeterminate with regard to its impact on the interactive streaming services. *See* 4/5/17 Tr. 4944–45 (Katz) (acknowledging the possibility that a mechanical royalty rate increase would affect sound recording royalties in the future but not immediately, and that there is no reliable estimate of the size of any such adjustment); 4/7/17 Tr. 5515–5516(Marx) ((stating that there would ''[m]aybe [there would] be some adjustment on the sound recording side . . . . [H]ow those negotiations play out, I think it's complicated and hard to guess''); 4/5/17 Tr. 5704–05 (Ghose) (''[I]t's quite likely that the streaming service will want to maintain their royalties and their revenues at the current levels. And so, you know, to me it seems like an extreme statement that the entire increase in publisher profits will come at the expense of the streaming services.''). And, to repeat, Copyright Owners own Shapley value expert, Professor Gans, suggests that the

[171] There is no record evidence that Microsoft continues to operate an interactive streaming service.

[172] I note that Google's economic expert, Dr. Leonard, did not testify in support of the rate structure for which the majority and Google have advocated for the first time post-hearing. In fact, he opined that the 2012 rate structure (without the Mechanical Floor) was the best rate structure for the 2018–2022 rate period.

[173] The Shapley value approach is described in more detail, *infra.*

[174] I will return to this crucial assumption presently.

[175] Another Shapley value expert for Copyright Owners, Professor Gans, does not concede that the ''see-saw'' effect will occur. Rather, he testified that the services might simply raise downstream prices or pay the higher royalties out of higher profits (which to date do not exist). Gans WRT ¶ 32. This opinion only underscores the tenuous nature of the see-saw hypothesis.

[176] The record companies would have to accept substantial losses in royalty income. According to the RIAA, interactive streaming revenues for 2015 totaled $1.604 billion. *See* Marx WDT ¶ 153 & App. B.1.b (citing RIAA figures). The extent of this assumed loss by record companies, absent any evidence, makes the assumption of the see-saw effect completely unreasonable.

burden will fall on the services, not the record companies.

To convince itself of the unlikelihood of such results, the majority notes that, as a matter of economic theory, given the present interactive streaming market structure, the record companies already have the economic power to put streaming services out of business, because the market in which record companies and interactive streaming services negotiate is unregulated. Indeed, the record companies' strategy has been to '[REDACTED].'' *Web IV, supra,* at 63 (restricted version).

But the static nature of this assumption is not reasonable in this context. It may be reasonable to assume, given the royalty revenue allocations *now present in the interactive streaming market,* that the record companies would continue to find it in their self-interest to maintain the existence of interactive streaming services. However, if mechanical royalty rates were to increase significantly, there is no evidence in the record in this proceeding that indicates whether the record companies would decide to maintain the current vertical structure of the market and docilely accept such a revenue loss. For example, they could create their own streaming services (perhaps learning the lessons from the failed Pressplay and MusicNet attempts of the past). Or, they could adopt what Professor Gans suggests, maintain the sound recording royalty rates, thereby hastening a more immediate exit of streaming services from the market, or reduce their potential for success, making them ripe for acquisition by record companies at distress prices.[177]

In any event, from an evidentiary perspective, there is no reason why the Judges should either indulge in or dismiss such speculation. There is absolutely no evidence that such a significant shift in royalty distribution would occur, nor is there sufficient evidence as to the potential consequences of such a draconian reallocation of revenue. Accordingly, I cannot agree with a rate structure that implicitly depends on the voluntary reduction in royalty income of by an unregulated input provider to whom the majority has ceded control over the statutory rates.

### E. The Majority Denigrates the Parties' Ten- Year Rate Structure as a ''Rube-Goldberg-esque'' Device.

The majority disparages the parties' ten year rate structure, spanning two settlements, as ''Rube-Goldberg-esque.'' Moreover, the majority characterizes the existing structure as ''impenetrable.'' That is a remarkable statement, given that the parties have operated under the structure for a decade—clearly they know how to penetrate the language and understand its meaning. It may be true, as discussed in more detail *infra,* that some songwriters and others may find the calculation of their royalties to be difficult to understand. However, the creative artists can utilize the services of their agents—the NMPA and others—to answer any questions that may arise. It seems close to hubris for any jurist to dismiss a decade-long voluntary rate structure, one that the parties have extended by agreement, as ''impenetrable,'' merely because the jurist finds the structure too difficult to understand.

The majority also indicates that it has the power to make certain that the regulations it adopts are sufficiently simple and understandable. Such a common sense point cannot be disputed, but it is misapplied here. Again, the proof of the pudding is in the eating, so to speak; the parties have operated under the existing rate structure for a prolonged period, belying any concern that the Judges should adopt regulations that are simpler, and reject those that are more complicated. Moreover, as noted *infra* (in response to the same ''complexity'' argument made by Copyright Owners), the issue of regulatory complexity is not a factor or objective in the rate-setting process under section 801(b)(1). Thus, if the 2012 rate structure otherwise is best suited to effectuate the statutory objectives as compared with the other alternatives, there is no basis for the complexity of the structure to override the specific application of the express statutory factors.

## III. The Majority Opinion is Legally Erroneous

### A. The Majority has not ''Determined'' Statutory Rates

Pursuant to 17 U.S.C. 801(b)(1), the Judges have the duty to make a determination'' of rates that are ''reasonable'' and that are calculated to achieve four itemized sets of objectives. The majority's two-pronged rate proposal fails to discharge this duty. Rather, the majority has adopted a rate structure that is *indeterminate,* allowing the record companies, especially the major record companies with ''must have'' repertoires, to set the mechanical rates that are paid under section 115.

Merely setting the ratio between sound recording royalty rates and mechanical royalty rates is not the same as actually making a ''determination'' setting the rates. As noted in Section I, *supra,* pegging the *regulated* mechanical royalty rate to the *unregulated* sound recording royalty rate through the ''greater of'' uncapped TCC prong leaves the statutory mechanical rate *indeterminate.* Nothing in section 801(b)(1) permits the setting of an indeterminate rate that becomes determined only when an unregulated private party sets its own rates.[178]

### B. The Majority Decision Unlawfully Delegates to Private Entities, Unrepresented in this Proceeding (the Record Companies), the Ability to Set the Section 115 Royalty Rates

The majority's adoption of an uncapped TC C prong in a greater of structure constitutes an improper delegation of a statutory duty to the record companies, who are private entities. However, the majority has not cited any authority supporting such a private delegation, nor has it suggested that its uncapped TCC presents an issue regarding the delegation of duties.

The Supreme Court and the D.C. Circuit have established a ''private nondelegation doctrine,'' which prohibits the delegation of statutory duties to private entities. *Carter v. Carter Coal Co.,* 298 U.S. 238 (1936); *Ass'n of Am. R.R.s v. U.S. Dep't of Transp.,* 721 F.3d 666, 675 (D.C. Cir. 2013), *vacated and remanded sub nom. Dep't of Transp. v. Ass'n of Am. R.Rs.,*

[177] The majority dismisses the risk of the destruction of the present market structure as not the type of disruption that the Judges may consider. Majority Opinion at 74 n.137. However, the majority finds that it must implement its 44% rate increase incrementally over five years, because a more sudden implementation would be disruptive under the statutory standard. It seems apparent that establishing a rate structure that cedes control to the record companies who can increase the mechanical rate at will is at least as disruptive to the industry. Moreover, the disruption is not merely to one business, but rather to every service and every service business model now in operation. (Recall that even Google, who claims to support this rate structure, acknowledges that the services are subject to abuse from the record companies' market power, and Google puzzlingly calls on ''someone'' to ''watch'' the situation.) Moreover, as Copyright Owners point out, as discussed *supra,* even they face significant risk from this structure. *Indeed, this rate structure is an ''equal opportunity disrupter.''*

[178] This point needs to be distinguished from the case where the parties voluntarily agree to recognize the perfect complementarity between inputs, such as in the ''All-In'' context, and deduct the cost of the perfectly complementary performance right when calculating the mechanical license. In the ''All-In'' case, the parties' prior agreement is part and parcel of the useful 2012 benchmark adopted in this Dissent, and the licensors are essentially the same underlying entities.

135 S.Ct. (2015) (*Railroad v. DOT*). In *Railroad v. DOT,* the D.C. Circuit struck down a statute that explicitly delegated regulatory authority to Amtrak, allegedly a private entity, to develop standards to evaluate passenger service quality. *Id.* at 673–677. The Association of American Railroads had challenged the delegation of authority to Amtrak, claiming it was a private entity and that the holding in *Carter Coal* precluded the delegation of such authority to a private entity. The D.C. Circuit agreed that this express grant of authority by Congress to a private entity was unconstitutional under the private nondelegation doctrine. *Id.*[179]

If Congress cannot expressly delegate statutory and regulatory power to a private entity, then, *a fortiori,* a subordinate administrative agency, the Copyright Royalty Board, cannot (or at least should not) be able to implicitly delegate statutory and regulatory authority to private entities. Yet in this case, the majority has implicitly made such a subdelegation, yoking the mechanical royalty rates paid by interactive streaming services to the rates set by record companies, an unregulated sector of the music industry. Thus as explained *supra,* the level of rates can rise at the unfettered discretion of the record companies, to the detriment of the streaming services, and the measurement of royalties can lead to the diminution of the royalty base, to the injury of Copyright Owners, through the record companies' unbound right to define ''revenue'' and to compartmentalize consideration (*e.g.,* through equity instead of royalties).[180]

Not only does the private delegation of section 115 rate-setting authority via the pegging of that rate to the unregulated sound recording royalty rate appear to violate the private non-delegation doctrine, it also appears to be inconsistent with the Judges' expansive powers under *Chevron U.S.A. Inc. v. Nat'l Resources Defense Council,* 467 U.S. 837 (1984). Under the *Chevron* doctrine, courts defer to administrative agencies for three broad reasons: First, the agencies are presumed to have technical expertise. Second, as arms of the government, they are politically accountable. Third, an express delegation of authority by Congress to a public agency is an expression of legislative intent as to how a statute should be applied. *See* K. Brown, *Public Law and Private Lawmakers,* 93 Wash. U. L. Rev. 616, 655–57 (2016).

However, when an agency in turn delegates its powers to private entities, such as the record companies, these rationales disappear. With regard to the first rationale, technical expertise, the record companies certainly have expertise in the area of music royalty rate-setting. However, that expertise is married to an intention—indeed, a fiduciary obligation—that they seek to maximize their own profit, even if that maximization ''conflict[s] with the legislative mandates of Congress,'' such as the standards set forth in section 801(b)(1). *See id.* at 655. As for the second rationale, private entities, such as the record companies in this context, ''are not beholden to the democratic process,'' and the public therefore ''has no legal mechanism'' to hold them accountable. Thus, the second *Chevron* rationale is inapplicable. *See id.* at 657. Finally, with regard to the third basis for *Chevron* deference, legislative intent, private entities do not have the interest in filling in the interstices of ambiguous statutory authority by ascertaining the public interest. *See id.* at 658. Indeed, as corporations, their duty is to their shareholders, which, to state the obvious, is not the same as the public interest expressed in section 801(b)(1).

In the present case, the private delegation is even more problematic. The record companies to whom implicit rate-setting authority has been delegated are not in any sense neutral. In relation to the interactive streaming services, the record companies are licensors, seeking payment from the interactive streaming services. In relation to Copyright Owners, they are competitors for royalty revenue, in the sense that both the record companies and music publishers are input providers who compete for the downstream revenue generated by the interactive streaming services. It is hard to imagine that the Majority Opinion would (or should) be afforded *Chevron* deference, when the structure it creates smacks too much of the fox guarding not one but two henhouses.

Of course, a full evaluation of these legal issues, by the parties and the Judges, was skirted, because no party proposed during the hearing a rate structure with an uncapped TCC. If this structure had been proposed, the parties would most certainly have fully briefed the issue in their proposed Conclusions of Law and Reply Proposed Conclusions of Law. Alas, they were not given that opportunity, and the majority has acted without the aid of the parties' input.

There is a better approach. As set forth in full *infra,* I have presented an Alternative Dissenting Determination.

## ALTERNATE DISSENTING DETERMINATION

## IV. INTRODUCTION

The Copyright Royalty Judges (Judges) commenced the captioned proceeding to set royalty rates and terms to license the copyrights of songwriters and publishers in musical works made and distributed as physical phonorecords, digital downloads, and on-demand digital streams during the rate period January 1, 2018, through December 31, 2022. *See* 81 FR 255 (Jan. 5, 2016).

Below, I set forth my alternative analysis, rate structure and rates, in the form of a comprehensive alternative determination.

## V. ALTERNATIVE DETERMINATION OF RATE STRUCTURE AND RATES

In this alternative determination, I would establish the section 115 royalty rate structure, and rates, for the period 2018 through 2022, by adopting the 2012 settlement as the appropriate benchmark, thereby maintaining the same structure and rates as now exist under the current regulations. My decision in this regard is based on a comparative analysis of that benchmark and other benchmarks, and a consideration of other record evidence submitted by the parties, as fully set forth herein.

Additionally, had the record evidence not included the 2012 rate structure and rates as a designated benchmark, I nonetheless would have established for the 2018–2022 period the same rate structure and rates as now exist, pursuant to the Judges' authority to adopt the existing rates and rate structure when they find that those prevailing provisions better satisfy the statutory standards than any other proposed structures and rates properly discernible from the record evidence. *Music Choice v. Copyright Royalty Bd.,* 774 F.3d 1000, 1009 (D.C. Cir. 2014).

### A. Background

#### 1. Statute and Regulations

The Copyright Act (Act) establishes a compulsory license for use of musical works in the making and distribution of phonorecords. 17 U.S.C. 115. Phonorecords licenses now include physical and digital sound recordings embodying the protected musical works as well as digital sound recordings that may be streamed on demand by a listener.

The Section 115 compulsory license, created in 1909, reflected Congress's

[179] The Supreme Court vacated and remanded the case, after granting *certiorari,* holding that Amtrak was not in fact a private entity.

[180] The majority's concern for ''transparency,'' expressed as a criticism of the parties' workable ten year rate structure, disappears in connection with it delegation of rate-setting to the record companies. The definition of revenue, the handling of bundled products and the exclusion of certain consideration from royalties will remain opaque to the Judges and to Copyright Owners.

attempt to balance the exclusive rights of owners of copyrighted musical works with the public's interest in accessing protected works. In 1897, Congress extended copyright protection for the benefit of rightsholders to the performance of their musical compositions. Act of Jan. 6, 1897, 54th Cong., 2d Sess. Ch. 4, 29 Stat. 481 (1897). However, at the dawn of the 20th century, the standardization and commercialization of a prior technological advance roiled the musical works markets. That period saw the expansion of the manufacture and sale of piano rolls—a system of perforated notations that could be used in conjunction with ''player pianos''—to play music automatically.

The copyright implications of this commercial advancement were adjudicated in a 1908 Supreme Court decision, *White-Smith Music Publishing Co. v. Apollo Co.,* 209 U.S. 1 (1908). That decision held that piano rolls did not embody a system of notation that could be read and therefore were not ''copies'' of musical works within the meaning of the existing copyright laws, but rather were merely parts of devices for mechanically performing the music. *Id.* at 17. Thus, the owners of otherwise copyright-protected musical works lacked such protection vis-à-vis piano rolls.

In reaction to that decision, Congress expanded the rights of musical works copyright owners to include the right to make ''mechanical'' reproductions, such as piano rolls, that embody musical works. However, Congress made that right subject to a compulsory license because of concern about *monopolistic control* of the piano roll market by the makers of piano rolls (and another burgeoning invention, phonorecords). 17 U.S.C. 1 (1909); *see also* H.R. Rep. No. 60–2222, at 9 (1909).[181] Specifically, under the 1909 legislation, upon payment of a royalty rate of 2¢ per ''mechanical,'' any person was permitted to manufacture and distribute a reproduction of a musical work.

Congress revised the mechanical license in its broader 1976 revision of the copyright laws. Among the various changes relating to the phonorecords license, Congress directed licensees to provide copyright owners with a pre-use written ''notice of intention,'' in order to obtain the Section 115 license. The 1976 revisions to the Copyright Act retained the then extant royalty fee of 2.75¢ per phonorecord (or 0.5¢ per minute of playing time or fraction thereof, whichever amount was larger). However, the 1976 revision also created a new entity, the Copyright Royalty Tribunal (CRT), to conduct periodic proceedings to adjust the rate.[182]

In 1995, Congress passed the Digital Performance Right in Sound Recordings Act (DPRA), Public Law No. 104–39, 109 Stat. 336, extending the mechanical license to ''*digital* phonorecord deliveries'' (DPDs) (emphasis added), which the statute defines as each individual delivery of a phonorecord by digital transmission of a sound recording which results in a specifically identifiable reproduction by or for any transmission recipient of a phonorecord of that sound recording, regardless of whether the digital transmission is also a public performance of the sound recording or any nondramatic musical work embodied therein. 17 U.S.C. 115(d). Accordingly, the license now covers DPDs, in addition to physical copies, such as compact discs (CDs), vinyl records and cassette tapes.

A proceeding to determine reasonable royalty rates and terms for the section 115 mechanical license is commenced by the Judges on the schedule provided by 17 U.S.C. 803(b)(1)(A)(i)(V). Although a contested hearing may ultimately be necessary, the Act strongly encourages negotiated settlements among interested parties. *See* 17 U.S.C. 115(c)(3)(E)(i) (''License agreements voluntarily negotiated at any time between one or more copyright owners . . . and one or more persons entitled to obtain a compulsory license . . . shall be given effect in lieu of any determination . . . .''); 17 U.S.C. 803(b)(3) (requiring a ''Voluntary Negotiation Period''); 17 U.S.C. 803(b)(6)(C)(x) (requiring a settlement conference prior to a hearing).

As currently configured, the applicable regulations are divided into three subparts. Subpart A regulations govern licenses for reproductions of musical works (1) in physical form (vinyl albums, compact discs, and other physical recordings), (2) in digital form when the consumer purchases a permanent digital copy (download) of the phonorecord, and (3) inclusion of a musical work in a purchased telephone ringtone. Subpart B regulations govern licenses for interactive streaming and limited downloads. Subpart C regulations govern limited offerings, mixed bundles, music bundles, paid locker services, and purchased content locker services.

**2. Prior Proceedings**

In 1980, the CRT conducted the first contested proceeding to set rates for the Section 115 compulsory license. The CRT increased the then-existing rate by more than 45%, from 2.75¢ rate per phonorecord to 4¢ per phonorecord. 45 FR 63 (Jan. 2, 1980).[183] By 1986, the CRT had increased the mechanical rate to the greater of 5¢ per musical work or .95¢ per minute of playing time or fraction thereof. 46 FR 66267 (Dec. 23, 1981); *see also* 37 CFR 255.3(a)–(c). The next adjustment of the Section 115 rates was scheduled to begin in 1987. However, the parties entered into a settlement that the CRT adopted, setting the rate at 5.25¢ per track beginning on January 1, 1988, and established a schedule of rate increases generally based on positive limited percentage changes in the Consumer Price Index every two years over the next 10 years. *See* 52 FR 22637 (June 15, 1987). The rate increased until 1996, when the rate was set at the greater of 6.95¢ per track or 1.3¢ per minute of playing time or fraction thereof. *See* 37 CFR 255.3(d)–(h).

The rates set by the CRT pursuant to the 1987 settlement were set to expire on December 31, 1997. The Librarian of Congress announced a negotiation period for owners and users of the section 115 license in late 1996, during which the parties reached a settlement regarding rates for a ten-year period to end in 2008.[184] Under the settlement, (ultimately adopted by the Librarian), the rate for physical phonorecords was set at 7.1¢ per track beginning on January 1, 1998, and a schedule was established for fixed rate increases every two years over the next 10-year period with the rate beginning on January 1, 2006, being the larger of 9.1¢ per track or 1.75¢ per minute of playing time or fraction thereof. *See* 37 CFR 255.3(i)–(m); *see also* 63 FR 7288 (Feb. 13, 1998).

[181] Because of this history, and the fading importance of mechanical piano rolls, this license is often referred to as the ''phonorecords'' license, but still also remains identified, synonymously, as the ''mechanical'' license. In point of fact, vinyl records, CDs, tapes and any other physical reproductions would still constitute ''mechanical'' reproductions.

[182] *See* H.R. Rep. No. 94–1476 at 111 (1976); 17 U.S.C. chapter 8 (1978). In 1993, Congress abolished the CRT and replaced it with copyright arbitration royalty panels (CARPs). Copyright Royalty Tribunal Reform Act of 1993, Public Law No. 103–198, 107 Stat. 2304. In turn, Congress abolished the CARP system and replaced it with proceedings before the Copyright Royalty Judges. Copyright Royalty and Distribution Reform Act of 2004, Public Law No. 108–419, 118 Stat. 2341.

[183] The United States Court of Appeals for the District of Columbia Circuit affirmed the CRT. *Recording Industry Ass'n. of America v. Copyright Royalty Tribunal,* 662 F.2d 1 (D.C. Cir. 1981) (*1981 Phonorecords Appeal*) (remanded on other grounds).

[184] The Librarian initiated the 1976 proceeding during the period after the termination of the CRT and the inception of the CRB, a time during which controversies regarding royalty rates and terms were referred to privately retained arbitrators under the CARP program,

The rates adopted for DPDs for the 10-year period were the same as those set for physical phonorecords, and the rates for incidental DPDs were deferred until the next scheduled rate proceeding. *See* 37 CFR 255.5, 255.6; *see also* 64 FR 6221 (Feb. 9, 1999).

In 2006, with expiration of the previous settlement term nearing, the Judges commenced a proceeding to adjust the mechanical rates under section 115. On January 26, 2009, they issued a Determination, effective March 1, 2009. In that Determination, the Judges noted that the parties had settled their dispute regarding rates and terms for conditional downloads, interactive streaming and incidental digital phonorecord deliveries (*i.e.,* rates in the new subpart B). *Mechanical and Digital Phonorecord Delivery Rate Determination,* 74 FR 4510, 4514 (Jan. 26, 2009) (*Phonorecords I*). The parties who negotiated the settlement included the NMPA and DiMA, the trade association representing its member streaming services. *Testimony of Rishi Mirchandani,* Trial Ex. 1, ¶ 59 (Mirchandani WDT).

With regard to the subpart A rates, the Judges in *Phonorecords I* rejected the parties' proffered benchmark evidence, and instead adopted the existing rates and rate structure, holding as follows:

> Based on the evidence before us, we conclude that no single benchmark offered in evidence is wholly satisfactory with respect to all of the products for which we must set rates. . . . [W]e are not persuaded that the . . . existing rate . . . now in effect for nearly three years is . . . inappropriate.

*Phonorecords I* at 4522 (emphasis added).

Thus, in the first (and only) litigated section 115 proceeding before the Judges, they adopted the existing rates and structure for the subsequent rate period, rather than rates and a structure that were proposed by the parties, because the Judges were concerned that the parties' proposals would not be appropriate *for all of the products at issue.*[185]

In 2013, the Judges adopted a settlement that carried forward the existing rates and added a new subpart, subpart C, which, as noted *supra,* covers several newly regulated categories—''limited offerings, mixed service bundles, music bundles, paid locker services and purchased content locker services.'' *Adjustment of Determination of Compulsory License Rates for Mechanical and Digital Phonorecords,* 78 FR 67938 (Nov. 13, 2013) (*Phonorecords II*). Once again, the settling parties included the trade associations for the licensors and licensees, NMPA and DiMA, respectively. Mirchandani WDT ¶ 59.

The present section 115 proceeding thus is the third since the Judges were given jurisdiction under the Copyright Royalty and Distribution Reform Act of 2004.[186] In the *Phonorecords II* settlement, the parties agreed that any future rate determination for subparts B and C configurations presented to the Judges would be a *de novo* rate determination. *See* 37 CFR 385.17, 385.26 (2016). However, they did not agree that the existing rate structure or rates could not be considered as the bases for future rate determinations.[187]

**B. The Present Proceeding**

In response to the Judges' notice regarding the present proceeding, 21 entities filed Petitions to Participate.[188] The participants engaged in negotiations and discovery. On June 15, 2016, some of the participants [189] notified the Judges of a partial settlement with regard to rates and terms for physical phonorecords, permanent digital downloads, and ringtones—the services covered by the extant regulations found in subpart A of part 385. The Judges published notice of the partial settlement [190] and accepted and considered comments from interested parties.[191]

On October 28, 2016, NMPA, Nashville Songwriters Association International (NSAI), and Sony Music Entertainment (SME) filed a Motion to Adopt Settlement Industry-Wide. The motion asserted that SME, NMPA, and NSAI had resolved the issue raised by SME in response to the original notice. The Judges evaluated the remaining objection to the settlement filed by George Johnson dba GEO Music Group (GEO) and found that GEO had not established that the settlement agreement ''does not provide a reasonable basis for setting statutory rates and terms.'' *See* 17 U.S.C. 801(b)(7)(A)(iii). As a part of the second settlement, Sony withdrew from this proceeding. The Judges published the agreed subpart A regulations as a Final Rule on March 28, 2017.[192]

During the course of the proceeding, the Judges dismissed some participants and other participants withdrew. Remaining participants at the time of the hearing were NMPA and NSAI, representing songwriters and publisher copyright owners (collectively Copyright Owners), and GEO, the *pro se* songwriter/copyright owner. Licensees of the copyrights appearing at the hearing were Amazon Digital Services, LLC (Amazon), Apple Inc. (Apple), Google, Inc. (Google), Pandora Media, Inc. (Pandora), and Spotify USA Inc. (Spotify) (collectively referred to as the Services).

Beginning on March 8, 2017, the Judges conducted a twenty-one day hearing that concluded on April 13, 2017. During the course of the hearing, the Judges heard oral testimony from 37 witnesses,[193] and admitted over 1,100 exhibits. The participants submitted

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[185] That is, the Judges in *Phonorecords I* recognized that the existing rate structure and *rates were sufficient to cover all products at issue, a result that this Dissent likewise would accomplish. But, a fortiori,* in the present case this result is also backed by an evidentiary record supporting the continuation of the existing structure and rates, because the present regulatory structure has been presented by the Services *as a benchmark,* rather than as a default position.

[186] Pub. L. No. 108–419, 118 Stat. 2341.

[187] The *Phonorecords I* settlement agreement contained a clause stating that ''[s]uch royalty rates shall not be cited, relied upon, or proffered as evidence or otherwise used in the Proceeding,'' where ''the Proceeding'' was a defined term meaning *Phonorecords I.* Trial Ex. 6013, Ph*onorecords I* Agreement at Sec. 3. By contrast, the *Phonorecords II* settlement agreement did *not* contain such a clause that would preclude reliance on the evidentiary value of the *Phonorecords II* royalty rates. *See* Trial Ex. 6014, *Phonorecords II* Agreement at Sec. 5.5 (including a full-integration clause of the *Phonorecords II* wrapper agreement). I find this distinction important, because it demonstrates that the parties to the 2012 settlement understood the evidentiary value of the *Phonorecords II* settlement in the next section 115 proceeding, *i.e., this proceeding.*

[188] Initial Participants were: Amazon Digital Services, LLC (Amazon); Apple, Inc. (Apple); Broadcast Music, Inc. (BMI); American Society of Composers, Authors and Publishers (ASCAP); David Powell; Deezer S.A. (Deezer); Digital Media Association (DiMA); Gear Publishing Company (Gear); George Johnson d/b/a/GEO Music Group (GEO); Google, Inc. (Google); Music Reports, Inc. (MRI); Pandora Media, Inc. (Pandora); Recording Industry Association of America, Inc. (RIAA); Rhapsody International Inc.; SoundCloud Limited; Spotify USA Inc.; ''Copyright Owners'' comprised of National Music Publishers Association (NMPA), The Harry Fox Agency (HFA), Nashville Songwriters Association International (NSAI), Church Music Publishers Association (CMPA), Songwriters of North America (SONA), Omnifone Group Limited; and publishers filing jointly, Universal Music Group (UMG), Sony Music Entertainment (SME), Warner Music Group (WMG).

[189] The settling parties were: NMPA, NSAI, HFA, UMG, and WMG. As part of the settlement agreement, UMG and WMG withdrew from further participation in this proceeding.

[190] *See* 81 FR 48371 (Jul. 25, 2016).

[191] Three parties filed comments. American Association of Independent Music (A2IM), Sony Music Entertainment (Sony), and George Johnson dba GEO Music Group (GEO). A2IM urged adoption of the settlement and Sony approved of all but one provision of the settlement. GEO objected to the settlement.

[192] *See* 82 FR 15297 (Mar. 28, 2017).

[193] By stipulation of the participants, the Judges also accepted and considered written testimony from six additional witnesses who did not appear. Amazon designated and other participants counterdesignated testimony from the *Phonorecords I* proceeding, which was admitted as Exhibits 321 and 322.

Proposed Findings of Fact (PFF) and Proposed Conclusions of Law (PCL) on May 12, 2017, and Replies to those filings on May 26, 2017. On June 7, 2017, counsel for the parties made their closing arguments.

Under 37 CFR 351.4(b)(3), a participant may amend its rate proposal at any time up to and including the time it files proposed findings and conclusions.[194] In this proceeding, Copyright Owners, Google, Pandora and Spotify each filed an amended rate proposal with its filing of a PFF and PCOL.

The parties delivered closing arguments on June 7, 2017.

### C. Overview of the Licensing Parties

#### 1. The Licensees: The Streaming Services

Many diverse enterprises have launched new music streaming services to meet growing consumer demand for streaming. Currently, there are at least 31 music streaming services available from 20 identifiable providers. Some of the well-known of these include: Amazon, Apple, Google (and its recently acquired YouTube), Deezer (partnered with Cricket/AT&T), iHeartRadio, Napster, Pandora, SoundCloud, Spotify, and Tidal (partnered with Sprint). *Written Rebuttal Testimony of Jim Timmins,* Trial Ex. 3036, ¶ 20 (Timmins WRT). Most of the companies entering the on-demand streaming music market have done so recently. *Id.* ¶ 21. In the last five years, new entrants to the market have initiated at least five interactive streaming services, joining Spotify which launched in the United States in 2011. *Id.* ¶ 22.

By one estimate, as of 2016 there were [REDACTED] million United States on-demand subscribers: Spotify accounted for [REDACTED] million, [REDACTED] Apple Music (4 million), Rhapsody and Tidal (2 million each), and all others accounting for the remaining 4 million. *Written Testimony of Michael L. Katz (On behalf of Pandora Media, Inc.)* ¶ 34, Table 1 (Katz WDT). According to Spotify, as of June 2016, it had approximately [REDACTED] million monthly average users (MAU) in the United States, of which [REDACTED] million were subscribers, with apparently [REDACTED] million users of Spotify's ad-supported service. *Written Direct Testimony of Barry McCarthy (On behalf of Spotify USA Inc.)* ¶ 6 (McCarthy WDT).

Some of the services that offer music streaming are pure-play music providers, such as Spotify and Pandora.[195] Others, such as Amazon, Apple Music, and Google Play Music, are part of wider economic ''ecosystems,'' in which a music service is one part of a multi-product, multi-service aggregation of activities, including some that are also related to the provision of a retail distribution channel for music. For example, Amazon is a multi-faceted internet retail business. Amazon offers a buyers' program for an annual fee (Amazon Prime) that affords loyalty benefits to members, such as free or reduced rate shipping or faster delivery on the products it markets. For its music service, Amazon bundles interactive streaming at no additional cost with its Prime Membership, [REDACTED].[196] In addition to the Prime Music service, Amazon's U.S.-based business also includes an online store to purchase CDS and vinyl records, a digital download store, a purchased content locker service, Amazon Music Unlimited (a full-catalog subscription music service), and Amazon Music Unlimited for Echo (a full-catalog subscription service available through a single Wi-Fi enabled Amazon Echo device).[197] In launching Prime Music, Amazon relied on the Section 115 license as it did for Amazon Music Unlimited and Amazon Music Unlimited for Echo.[198]

Google describes its Google Play offerings as its ''one-stop-shop'' for the purchase of Android apps. The Google Play Store allows users to browse, purchase, and download content, including music. Google Play Music is Google Play's entire suite of music services. Google Play Music, launched in 2011, is bundled with the YouTube Red video service subscription.[199] *See Expert Report of Jui Ramaprasad November 1, 2016* at Table 2, and ¶ 62, n.105 (Ramaprasad WDT). It includes several functionalities: (1) Music Store; (2) a cloud-based locker service; (3) an on-demand digital music streaming service; and (4) a Section 114 compliant non-interactive digital radio service (in the U.S.). *Written Direct Testimony of Zahavah Levine,* Trial Ex. 692, ¶ 43 (Levine WDT).

The largest services entered direct agreements with publishers to license their musical works. The terms of those licensing agreements varied. For example, Apple agreed to [REDACTED] with the major publishers that includes a minimum [REDACTED]. *Expert Report of Jeffrey A. Eisenach, Ph.D.* ¶¶ 84–92 (Eisenach WDT). In these agreements, [REDACTED]. *Id.* ¶ 87 n.79.

Google's practice is to [REDACTED]. Levine WDT ¶¶ 51–52.[200]

There is conflicting evidence about whether the market for streaming services is faring poorly financially or performing about the same as other emerging industries. *See, e.g.,* Timmins WRT ¶¶ 16–17; Levine WDT ¶ 16 (''streaming music services generally remain unprofitable businesses'' with content acquisition costs (primarily music royalties) being ''the biggest barrier to profitability.'') For example, Spotify, one of the largest pure-play streaming services, has reportedly [REDACTED]. Katz WDT ¶ 65. Nevertheless, some estimates place Spotify's market value at more than $8 billion, suggesting perhaps, investors' expectation of future profits. *Expert Report of Marc Rysman, Ph.D.* ¶ 150 (Rysman WDT).[201]

#### 2. The Licensors: Publishers and Songwriters

The four largest publishers—Sony/ATV ([REDACTED] percent), Warner/Chappell ([REDACTED] percent), Universal Music Publishing Group (UMPG) ([REDACTED] percent), and Kobalt Music Publishing ([REDACTED] percent)—collectively accounted for just over 73 percent of the top 100 radio songs tracked by Billboard as of the second quarter in 2016. Katz WDT ¶ 46. In addition, there are several other significant publishers, including BMG and Songs Music Publishing, and many thousands of smaller music publishers and self-publishing songwriters. *Id.*

Songwriters have three primary sources of ongoing royalty income, which they generally share with music publishers: mechanical royalties,

[194] Nothing in § 351.4 permits the Judges to credit an amended rate proposal that is not adequately supported by the record evidence.

[195] Until late 2016, Pandora operated as a noninteractive streaming service, arguably not subject to the compulsory license for mechanical royalties, but Pandora recently began offering more interactive features, including a full on-demand tier. *Introductory Memorandum to the Written Direct Statement of Pandora Media, Inc.* at 1–2; *Written Direct Testimony of Christopher Phillips* at 8 (Phillips WDT).

[196] Amazon Prime is a $99- per-year service that offers Amazon customers access to a bundle of services including free two-day shipping, video streaming, photo storage and e-books, in addition to Prime Music. *Expert Report of Glenn Hubbard, November 1, 2016* at 15 (Hubbard WDT).

[197] Mirchandani WDT at 5.

[198] 3/15/17 Tr. 1315–16 (Mirchandani).

[199] Google's experience with music licensing dates at least far back as 2006, when it acquired YouTube. Levine WDT at 3. Google's music services were part of Google's Android Division but were recently combined within the YouTube business unit. *Id.* at 3–4.

[200] According to Ms. Levine, labels historically have not passed through mechanical rights to subscription services so the lower percentages are irrelevant. Levine WDT at n.5.

[201] The implications of the different perspectives on industry profit and losses are considered *infra* in this Dissent.

synchronization (''synch'') royalties, and performance royalties.[202] *See* Katz WDT ¶ 41; *Copyright and the Music Marketplace: A Report of the Register of Copyrights* at 69 (Feb. 2015) (*Register's Report*).[203] Songwriters who are also recording artists receive a share of revenues from their record labels for the fixing of the musical work in a sound recording. Sound recording royalties include those from the sale of physical and digital albums and singles, sound recording synchronization, and digital performances. *Id.* Recording artists can also derive income from live performances, sale of merchandise, and other sources. *Id.* at 69–70.

The shift in consumption from physical sales to streaming coincided with a reallocation of publisher revenue sources. In 2012, 30% of U.S. publisher revenues came from performance royalties and 36% from mechanical royalties, with the rest coming from synch royalties and other sources. *See Register's Report* at 70. By 2014, 52% of music publisher revenues came from performance royalties, while 23% came from mechanical royalties, with the remainder coming from synch royalties and other sources. *Id* at 71, n.344. By one estimate, mechanical license revenues from interactive streaming services accounted for only [REDACTED] percent of total music publishing revenues in 2015. Katz WDT ¶ 42.

It is noteworthy that the shift from mechanical royalties to performance royalties coincided with the shift from sales of phonorecords, DPDs, and CDS, for which no performance royalty is required, to the use of interactive streaming, *for which a performance royalty and a mechanical royalty are both required.* Further (as discussed more fully *infra*), the latter is reduced pursuant to an ''All-In'' formula that reflects the perfect complementarity of the performance and mechanical licenses (*i.e.,* neither license has any value to an interactive streaming service without the other). Additionally, noninteractive streaming pays only a performance royalty but no mechanical royalty, providing a further basis for mechanical royalties to be a smaller percentage of the publishers' total revenues, assuming growth in noninteractive streaming. *See Services' Joint Proposed Findings of Fact and Conclusions of Law* ¶¶ 271, 283 (SJPFF).)

Total publishing revenue declined by [REDACTED] percent between 2013 and 2014, but then increased by [REDACTED] percent between 2014 and 2015. Katz WDT ¶ 58. The largest publishers, Sony/ATV, UMPG, and Warner Chappell, [REDACTED], earning a combined $[REDACTED] million from U.S. publishing operations for that year. *Id.* ¶ 59.

### D. The Rate-Setting Standards in Section 801(b)(1)

#### 1. The Legal Basis for the Four Itemized Objectives

The Copyright Act requires that the Judges establish ''reasonable'' rates and terms for the Section 115 license. In addition, section 801(b)(1) instructs the Judges to set these rates ''to achieve the following objectives'':

> Factor A: To maximize the availability of creative works to the public;
> Factor B: To afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions;
> Factor C: To reflect the relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication; and
> Factor D: To minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.

17 U.S.C. 115(c) and 17 U.S.C. 801(b)(1).[204]

In the *1981 Phonorecords Appeal,* the D.C. Circuit noted the interplay among these four objectives:

> [T]he statutory factors pull in opposing directions, and reconciliation of these objectives is committed to the Tribunal as part of its mandate to determine ''reasonable'' ' royalty rates . . . . [T]he Tribunal was not told which factors should receive higher priorities. To the extent that the statutory objectives determine a range of reasonable royalty rates that would serve all these objectives adequately but to differing degrees, the Tribunal is free to choose among those rates, and courts are without authority to set aside the particular rate chosen by the Tribunal if it lies within a ''zone of reasonableness.''

*Id.* at 9.

When applying the foregoing standards, the Judges are not required to establish rates that are mathematically precise, given the nature of the statutory task and the controlling legal precedents. *Nat'l Cable Television Ass'n* v. *Copyright Royalty Tribunal,* 724 F.2d 176, 182 (D.C. Cir. 1983) (''Ratemaking generally is an intensely practical affair. . . . The Tribunal's work particularly, in both ratemaking and royalty distribution, necessarily involves estimates and approximations. There has never been any pretense that the CRT's rulings rest on precise mathematical calculations; it suffices that they lie within a 'zone of reasonableness.' '') (citations omitted).

The Judges also have discretion as to whether and how they choose to integrate their application of the ''reasonable rate'' standard with their analysis of the four itemized factors in section 801(b)(1). They may: (1) establish a ''reasonable rate'' as an initial step, and *then* apply the four itemized factors; *or* (2) integrate their analysis of the four itemized factors into a single ''reasonable rate'' approach—even *beginning* that approach with a consideration of the four factors. *Compare Recording Industry Ass'n of America, Inc.* v. *Librarian of Congress,* 176 F.3d 528, 533 (D.C. Cir. 1999) (approving of the latter approach) *with Phonorecords I* (applying the former approach, explaining that ''the issue at hand in analyzing the section 801(b) factors is whether these [four] policy objectives weigh in favor of divergence from the results indicated by the benchmark marketplace evidence.'') 73 FR at 4094 (Jan. 24, 2008) (quoting *SDARS I*).[205]

#### 2. The Economic Basis for the Four Itemized Objectives

The legal and regulatory process of setting statutory royalty rates and terms has long been informed by economics. *See, e.g.,* W. Blaisdell, Study No. 6, *The Economic Aspects of the Compulsory License, U.S. Senate Subcommittee on Patents, Trademarks and Copyrights* (October 1958) (Senate Study). This is certainly true with regard to the establishment of the standards set forth in section 801(b)(1). The legislative history in the long build-up to the adoption of these standards is highlighted by dueling economic

[202] Another revenue source is folio licenses, lyrics, and musical notations in written form. Katz WDT at 31.

[203] References to the *Register's Report* are incorporated herein to provide background information. This Dissent is not based on factual information or opinion contained therein, as that document is not record evidence in this proceeding.

[204] The 1976 Act applied section 801(b)(1) and its four-factor test to new licenses. The mechanical license at issue in this proceeding is the lone existing statutory license carried forward into the 1976 Act from the 1909 Copyright Act and made subject to the 801(b)(1) standards.

[205] In the present proceeding, the parties' arguments combine both approaches. For example, as discussed *infra,* the issue of ''rate structure'' is analyzed by the parties as a marketplace issue, which places it in the analytical ''reasonable rate'' box, and also as a Factor B and Factor C issue, affecting the analysis of ''fair'' return and income and the ''relative roles'' of the parties. Thus, in this Dissent, I shall also on occasion apply the same analyses to certain ''reasonable rate'' and ''itemized factor'' issues.

positions taken in Congressional testimony in 1967 by the licensors, through the NMPA and its economic witness, Robert R. Nathan, and by the licensees, the RIAA, through their counsel, Thurman Arnold, Esq., a well-known advocate of strong antitrust enforcement. *See* Hearing on S. 597, Subcomm. on Patents, Trademarks and Copyrights of the S. Committee on the Judiciary (Mar. 20–21, 1967) (Senate Hearing).

Mr. Nathan expressed incredulity that the songwriting industry would even be subject to a compulsory mechanical licensing scheme. *Id.* at 382.[206] Mr. Nathan did not see any basis for treating this license differently than how ''we generally function under competitive marketplace bargaining arrangements whereby most entities in our economy bargain for that which goes into the creation of goods and services and also bargain the price for which those goods and services are sold.'' *Id.*

Thus, in his 1967 testimony, Mr. Nathan advocated that Congress eliminate the compulsory license and the statutory rate. Importantly *for the present proceeding,* he specifically urged Congress (if it did not eliminate the compulsory license) to resist replacing the fixed statutory fee with a regulatory standard to be implemented by a quasi-adjudicatory body, *as one might regulate a public utility.* He explained to Congress: ''[O]ne might ask . . . whether the music publishing industry has any characteristics of a public utility. I submit . . . that there is nothing in the music publishing industry which gives [it] the characteristics or the elements of a public utility . . . .'' *Id.* at 383. Mr. Nathan noted what he understood to be a key distinction: Unlike traditional public utilities like ''railroad systems'' or ''streetcar lines,'' the songwriting and publishing industry is ''a creative and non-standardized area,'' and ''[m]onopoly and public utility aspects are just not prevalent in this industry.'' *Id.*

The opposing position of the licensees, expressed by Mr. Arnold on behalf of the RIAA, contained the seeds of the standard ultimately adopted in section 801(b)(1). As Mr. Arnold testified, the statute should include, *inter alia,* ''accepted standards of statutory ratemaking,'' including a rate ''that insures the party against whom it is imposed a reasonable return on . . . investment'' and ''that divides the rewards for the respective creative contributions of the record producers [as licensees] and the copyright owners . . . equitably between them.'' *Id.* at 469.

Mr. Nathan criticized this approach on two fronts. First, he argued that the ''personal service'' nature of the songwriting and publishing industry precluded application of a ''reasonable rate of return'' requirement for the setting of the compulsory royalty rate.[207] Second, with regard to the division of the ''rewards'' proposed in Mr. Arnold's testimony, Mr. Nathan stated that ''I have never in all my experience encountered this novel concept of dividing rewards for creative contributions as a meaningful and relevant standard of ratemaking.'' *Id.* at 1093–94.

This 1967 dispute was never resolved. Rather, the issue languished until 1980, when, Congress abandoned the statutorily-fixed rate and substituted a regulatory rate-setting process. However, the post-1967 legislative history did not elucidate how rates set under the new statutory standard were to be related (if at all) to marketplace rates, either as a matter of law or a matter of economic policy. F. Greenman & A. Deutsch, *The Copyright Royalty Tribunal and the Statutory Mechanical Royalty: History and Prospect,* 1 Cardozo Arts & Ent. L.J. 1, 53, 59 (1982).[208]

**3. The ''Bargaining Room'' Rate-Setting Theory Under Section 801(b)(1)**

**a. The Bargaining Room Theory in Historical Context**

A corollary to the debate regarding the standard to be established in section 801(b)(1) was another dispute: whether the statutory rates and terms should be set pursuant to what was coined the ''bargaining room theory'' of rate-setting. This theory was summarized by Mr. Nathan: When setting a statutory or regulatory rate, the rate-setter should allow for ''opening up of the bargaining range [with] a higher ceiling so that more bargaining can take place,'' which would ''permit competitive bargaining . . . .'' Senate Hearing at 384, 421. In fact, Mr. Nathan and the NMPA were quite specific as to how the rate-setter should determine the range for bargaining under this theory: ''[T]he rate should be high enough to allow and encourage private negotiation, but not so high as to make the compulsory licensing provision meaningless . . . .'' *Id.* at 417.

Before the Senate Judiciary Committee, the RIAA's attorney, Mr. Arnold, asserted that incorporating the bargaining room theory into the new statute would flaunt the purpose of a compulsory license:

> [T]o set a statutory rate so high as to promote negotiations by a record manufacturer and a publisher below that statutory rate violates and contradicts the very purpose of imposing the compulsory license on the music publisher.

Senate Hearing at 468.

The bargaining room theory would permit different pairings of licensors and licensees to enter into agreements *at varying rates* below the statutory rate. Indeed, a CBS Records witness before the Senate Judiciary Committee acknowledged that ''[a] higher ceiling would permit *wider variation in royalty rates.* . . . '' *Id.* at 417 (emphasis added). Further, Mr. Nathan explained this commercial desire for a variety of rates in somewhat more formal economic terms: ''[A] prudent businessman . . . merely wants to price his goods on the apparent *willingness of the consumer to pay.*'' *Id.* at 419 (emphasis added).

The House Judiciary Committee adopted the bargaining room theory in its report:

> The committee is setting a statutory rate at the high end of a range within which the parties can negotiate, now and in the future, for actual payment of a rate that reflects market values at the time, but one that is not so high as to make it economically impractical for record producers [as licensees] to invoke the compulsory license if negotiations fail.

H.R. Rep. at 21.

Despite movement in the House, in the event, the language in section 801(b)(1) as enacted did not address the bargaining room theory, but rather set forth the aforementioned requirement for the establishment of ''reasonable'' rates and for the achievement of the objectives set forth in Factors A through D. As two attorneys who were involved in the process of crafting section 801(b)(1) wrote in their exhaustive history of the process:

> The most significant elements of the statutory criteria may be what they omit.

[206] This overarching criticism of the *existence* of statutory license was echoed in the present proceeding by NMPA's President, David Israelite. 3/29/17 Tr. 3677 (acknowledging that he ''always disapproved of the compulsory licensing system, ever since [he] knew about it.) (Israelite); *see also Witness Statement of David M. Israelite* ¶ 55 (Israelite WDT) (''I feel it is important . . . to express my view that [the compulsory license] is no longer necessary . . . .'').

[207] The Judges note that this unique ''personal service'' aspect of the business is less economically significant when, as is typical, published songs are collected and owned by large publishing firms, and such firms each price their repertoires jointly through blanket licenses.

[208] The standards apparently were adopted to ensure the constitutionality of the delegation of rate-setting by Congress to an administrative body. *See SDARS I,* 73 FR at 4082 (citing Hearings on H.R. 2223 before the Subcomm. on Courts, Civil Liberties, and the Administration of Justice of the House Comm. on the Judiciary, 94th Cong., 1922 (1975)).

They do not include any explicit mention of the standard . . . adopted by the House Judiciary Committee in 1967 that the statutory rate should be at the high end of a range within which the parties can negotiate . . . for an actual payment of a rate that reflects market values and . . . not so high . . . as to make it economically impractical for record producers to invoke the compulsory license if negotiations fail.

Greenman & Deutsch, *supra,* at 59.

In 1981, the CRT ruled that, *as a matter of law*, the language in section 801(b)(1) precluded the use the bargaining room approach to rate-setting. *Adjustment of Royalty Payable under Compulsory License for Making and Distributing Phonorecords,* 46 FR 10466, 10478 (1981). On appeal, the D.C. Circuit affirmed the CRT's decision to eschew this approach. *1981 Phonorecords Appeal, supra.* However, the D.C. Circuit's affirmance was not based on the CRT's conclusion that the ''bargaining room'' approach was impermissible *as a matter of law.* Rather, the appellate court held that the CRT had exercised its lawful statutory discretion—in the form of a *policy determination*—to reject the use of the ''bargaining room'' approach. *Id.* at 37. With regard to the legal question as to whether the ''bargaining room'' theory could be applied by the rate-setter, the D.C. Circuit held that ''the statutory criteria . . . do not explicitly address the bargaining room question, and that dispute can only be resolved through the [CRT's] articulation of principles that flesh out the statutory notions of 'reasonable' rates and 'fair' returns.'' *Id.* at 36. As the authors of the historical article noted, this appellate ruling preserved for future litigants the right to advocate for a policy change to allow for an implementation of the ''bargaining room'' approach under section 801(b)(1). Greenman & Deutsch, *supra,* at 64. Those ''future litigants'' have arrived in this proceeding.

**b. The Bargaining Room Theory in the Present Proceeding**

In the present case, the parties disagree on the issue of whether the Judges should apply the bargaining room theory of rate-setting in this determination. *Compare Copyright Owners' Reply to Services' Joint Proposed Findings of Fact and Conclusions of Law* at 146 (CORPFF–JS) (''Copyright Owners . . . contend that . . . [the] bargaining room theory [is a] quite permissible consideration[ ] under 801(b)(1) analysis . . .'') *with Services' Joint Reply to the Copyright Owners' Proposed Findings of Fact and Conclusions of Law* at 28 (SJRPFF–CO) (''[a] rate creating 'bargaining room' under which copyright users must try to make private deals [is] inconsistent with Section 801(b)(1) . . .''). In further support of their argument in favor of the bargaining room theory, Copyright Owners emphasize the inability of the Judges (or anyone) to identify present market rates precisely, let alone over the five year rate period. *Proposed Conclusions of Law of Copyright Owners* ¶ 89 (COPCOL) (''the compulsory license set by the Judges cannot possibly contemplate every single business model that may develop in the ensuing time.''). Their reasoning is a reprise of the original argument for the bargaining room theory: If the statutory rate is set *below* market rates, then the parties will *never* negotiate upward toward the market rates, because the licensees will always prefer to invoke the right to use the licensed work at the below-market statutory rates. However, if the Judges set the statutory rate *above* what they find to be market rates, different licensees who each have a maximum willingness to pay (WTP) *below* such a statutory rate would seek to negotiate lower rates with the licensors. In response to such requests to negotiate, according to this argument, Copyright Owners would respond by negotiating various lower rates for those licensees, provided lower rates were also in the self-interest of Copyright Owners. 4/3/17 Tr. 4431 (Rysman).

I find, as a matter of *policy,* that the bargaining room theory is not applicable to the setting of rates in the present case. Rather, I agree with the policy decision in *Phonorecords I* that the rate setting policies made explicit in section 801(b)(1) are best discharged if the Judges identify rate structures and rates that reflect the standards set forth in the statutory provision. Indeed, if the Judges were to supplant the statutory factors with a theory leading to rates intentionally designed to substitute discretionary bargaining, the parties would essentially be returned to a purely market-based rate-setting approach. *See* 3/21/17 Tr. 2194 (Hubbard) (adoption of the ''bargaining room theory'' would ''extensively'' shift bargaining power to the Copyright Owners); *see also* 3/13/17 Tr. 569 (Katz) (''the statutory proceeding . . . ''help[s] offset the possible asymmetries'' in bargaining power).

Notably, section 801(b)(1) does not require the Judges even to attempt to set market rates, or to use market rates to establish ''reasonable'' rates under the statute. *Music Choice,* 774 F.3d, *supra,* at 1010. (''Copyright Act permits, *but does not require,* the Judges to use market rates to help determine reasonable rates'') (emphasis added). Moreover, as noted *supra,* the Judges are required to consider not only the reasonableness of the rates, but also how the four itemized factors listed in section 801(b)(1) bear on the reasonableness of the rates, *i.e.,* the maximization of the public ''availability'' of musical works, ''fair'' return, ''fair'' income and ''minimize[d] . . . disruptive impact.'' These are not factors necessarily implicated or fully addressed by a market-based analysis. If the Judges were to adopt wholesale the bargaining room theory, they would eliminate the value of those extra-market factors. Finally, as Dr. Eisenach conceded, adoption of the bargaining room theory would alter the parties' respective ''threat points'' (a/k/a ''disagreement points'') in the ''Nash context,'' increasing Copyright Owners' bargaining power as compared with the non-application of the bargaining room approach. 4/4/17 Tr. 4846–47 (Eisenach).[209]

In addition, an application of the bargaining room theory would be inconsistent with another purpose of statutory licensing—the minimization of transaction costs. If each interactive streaming service were required to negotiate separately with each music publisher, the process would diminish the transaction cost savings, which is an important reason for statutory licensing. *See* 4/6/17 Tr. 5233 (Leonard) (''the point of having this kind of compulsory licensing setting is to reduce transactions cost and to . . . prevent the exercise of market power and prevent disruption in the marketplace.''); 4/13/17 Tr. 5901 (Hubbard) (most listeners demonstrate low WTP such that ''notion of negotiation with [that] entire long tail is a lot of transactions costs . . . which would seem to me to be at odds with the 801(b) factors. . . . [I]t . . . would seem to subvert the very purpose of this hearing to just suggest wholesale private renegotiation.'').

On balance, based on the foregoing, I do not accept and will not apply the bargaining room theory to establish either the rate structure or the zone of reasonable rates.

**E. The Present Rate Structure and Rates**

Subpart B sets forth mechanical royalty rates in connection with the delivery and offering of interactive streams and/or limited downloads.

[209] A ''threat point'' or ''disagreement point'' is a concept from bargaining (game) theory (specifically, in the Nash bargaining model) representing the value point at which a party will walk away from negotiations—thereby affecting the value of the ultimate bargain. *See SDARS II,* 74 FR 23054, 23056–57 (April 7, 2017) (summarizing the Nash model).

There are three product distinctions within the subpart B rate structure:

(a) Nonportable vs. Portable Services
(b) Unbundled vs. Bundled Services
(c) Subscription vs. Ad-Supported Services

37 CFR 385.13.

Copyright Owners provide a helpful and more specific summary of these categories:

(a) ''standalone non-portable subscription—streaming only'' services (*i.e.,* tethered to a computer);
(b) ''standalone non-portable subscription—mixed'' (*i.e.,* both streaming and limited download) services;
(c) ''standalone portable'' subscription streaming and limited download services (*i.e.,* accessible on mobile or other Internet-enabled devices);
(d) ''bundled subscription services'' which are streaming and limited download services bundled with another product or service; and
(e) ''free [to the end user] nonsubscription/ad-supported services.''

*Copyright Owners' Written Direct Statement, Proposed Rates and Terms* at B–3 (Copyright Owners' Proposal) (quoting 37 CFR 385.13).

More granularly, the present subpart B rate structure and rates and for interactive streaming and limited downloads, as agreed to by the parties in their 2012 settlement, are set forth in full at 37 CFR 385.12 and 385.13, and are summarized below: [210]

1. Calculate the ''All-In'' Publishing Royalty for the Service Offering

a. maximum of 10.5% of service revenue and the following minimum royalties based on the type of service:

(i) Standalone Non-Portable Subscription, Streaming Only:

—lesser of 22% of service payments for sound recording rights [211] and $0.50 per subscriber per month.

(ii) Standalone Non-Portable Subscription, Mixed Use:

—lesser of 21% of service payments for sound recording rights and $0.50 per subscriber per month.

(iii) Standalone Portable Subscription, Mixed Use:

—lesser of 21% of service payments for sound recording rights and $0.80 per subscriber per month.

(iv) Bundled Subscription Services:

—21% of service payments for sound recording rights.

(v) Free Non-Subscription/Ad-Supported Services:

—22% of service payments for sound recording rights.

2. Subtract Applicable Performance Royalties [the ''All-In'' Calculation] (*i.e.,* subtract from the result in the previous step the ''total amount of royalties for public performance of musical works that has been or will be expensed pursuant to public performance licenses in connection with uses of musical works through such offering.'')

3. Compare the maximum of the result from the previous steps and the following mechanical-only per subscriber royalty floors based on the type of service: [212]

(a) Standalone Non-Portable Subscription, Streaming Only: $0.15 per subscriber per month.
(b) Standalone Non-Portable Subscription, Mixed Use: $0.30 per subscriber per month.
(c) Standalone Portable Subscription, Mixed Use: $0.50 per subscriber per month.
(d) Bundled Subscription Services: $0.25 per active subscriber per month.
(e) Free Non-Subscription/Ad-Supported Services: Not Applicable.[213]

Subpart C of part 385 sets forth the royalty structure and rates for licensing mechanical rights for five categories: limited offerings, mixed service bundles, music bundles, paid locker services, and purchased content locker services. The present subpart C rate structure, established consensually in the 2012 settlement, are set forth at 37 CFR 385.20 through 385.26. As succinctly summarized by Dr. Leonard (*see* Leonard AWDT ¶ 26), the structure and rates are as follows:

1. Calculate the ''All-In'' Publishing Royalty for the Service Offering

a. Maximum of the applicable percentage of service revenue based on the type of service:

(i) Mixed Service Bundle: 11.35% of service revenue.

(ii) Music Bundles: 11.35% of service revenue.

(iii) Limited Offering: 10.5% of service revenue.

(iv) Paid Locker Service: 12% of incremental service revenue.

(v) Purchased Content Locker: 12% of service revenue.

and

b. The applicable ''All-In'' minimum, also based on the type of service:

(i) Mixed Service Bundle: 21% of service payments for sound recording rights.

(ii) Music Bundles: 21% of service payments for sound recording rights.

(iii) Limited Offering: 21% of service payments for sound recording rights (subject to a further minimum payment of $0.18 per subscriber per month).

(iv) Paid Locker Service: 20.65% of service payments for sound recording rights (subject to a further minimum payment of $0.17 per subscriber per month).

(v) Purchased Content Locker: 22% of any incremental service payments to record companies for sound recording rights (above the otherwise applicable payments for permanent digital downloads and ringtones).

2. Subtract Applicable Performance Royalties

Subtract from the result in the previous step the ''total amount of royalties for public performance of musical works that has been or will be expensed pursuant to public performance licenses in connection with uses of musical works through such subpart C offering.'' [214]

At the time of the hearing, the services paid the following subpart B mechanical rates: [215]

[210] This summary is set forth in the Amended Expert Witness Statement of Dr. Gregory Leonard, Google's economic expert witness. *See Amended Expert Witness Statement of Dr. Gregory K. Leonard* ¶ 25 (Leonard AWDT). I find Dr. Leonard's format to be particularly useful, but I note that all the parties clearly and consistently summarized the existing rate structure. *See also, e.g.,* Israelite WDT ¶ 28.

[211] To be clear, these alternative percentages reflect percent of *payments to record companies for sound recording rights, unregulated and set in the market,* not the percent of revenue received by the interactive streaming services. That is, these are the so-called ''TCC'' rates.

[212] This is the so-called ''Mechanical Floor'' rate, discussed *infra.*

[213] The regulations also describe how the royalty revenue collected shall be allocated among musical works that had been played on the interactive streaming services. That allocation is made on a per play basis, and, under the parties' proposals in this proceeding, that general allocation principle would remain unchanged. *Compare* Copyright Owners' Proposal at B–14–15 *with, e.g., Second Amended Proposed Rates and Terms of Spotify USA Inc.* at 12–13 (Spotify's Proposal).

[214] As under subpart B, collected royalties under subpart C are allocated on a per play basis. The Services, and Apple, do not propose a change in this regard. Copyright Owners, given their proposal that subpart C be eliminated, would utilize the subpart B allocation methodology for the service offerings now in subpart C.

[215] Pandora had not begun its interactive streaming service at the time of the hearing. However, since November 2015, Pandora asserts that it has entered into direct licenses with thousands of music publishers that cover the mechanical rights that are at issue in this proceeding. *Written Direct Testimony of Michael Herring* ¶ 49 (Herring WDT). *See, e.g.,* PAN Dir. Exs. 6–7. Many of those deals bundle interactive streaming (for which mechanical and performance rights are required) and noninteractive streaming (for which, arguably, no mechanical license is required). Katz WDT ¶ 105.

| Licensee/service | Rate prong | Rate | Reg or direct contract | Source |
|---|---|---|---|---|
| Amazon Unlimited for Echo | [REDACTED] | $[REDACTED] | § [REDACTED] | Brost WDT,[216] Ex. 18 (HX 20). |
| Amazon Prime | [REDACTED] | $[REDACTED] | § [REDACTED] | Marx[217] WRT ¶ 40. |
| Apple Music | Not Applicable | [REDACTED] | Direct contracts | Wheeler[218] WDT ¶¶ 10, 12; HX 1432, HX 1434, HX 1435. |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | Leonard AWDT ¶ 52 *et seq*. |
| Spotify/Ad-Supported | [REDACTED] | [REDACTED] | § [REDACTED] § [REDACTED] | Marx WDT[219] ¶ 83. |
| Spotify Subscription | [REDACTED] | $[REDACTED] | § [REDACTED] | Marx WDT ¶ 76. |

**F. The Economic Framework for Analyzing the Rate Structure Issues**

The parties' proposals are based on varying explicit and implicit assumptions regarding the economic principles that underlie the licensing of musical works. During the hearing, the parties have urged the Judges to apply certain economic principles, often imploring the Judges to recognize that the economic underpinnings of their arguments can be found in the teachings of a generic introductory ''Economics 101'' course. *See, e.g.,* 3/8/17 Tr. 133 (Copyright Owners' Opening Statement); 3/14/17 Tr. 920 (Herring); 4/13/17 Tr. 5917 (Lane). I generally agree that, particularly with regard to the rate structure, it is helpful to ''begin at the beginning''—*i.e.,* with basic economic principles—so that the subsequent analyses are grounded in some basic concepts.

Basic economic theory teaches that supply and demand determine an equilibrium market price. *See, e.g.,* W. Nicholson & C. Snyder, *Microeconomic Theory* at 10 (10th ed. 2008) (''[D]emand and supply interact to determine the equilibrium price and the quantity that will be traded in the market.''); *see also* Final Rule and Order, *Determination of Reasonable Rates and Terms for the Digital Performance of Sound Recordings,* Docket No. 96–5 CARP DSTRA, 63 FR 25394, 25404 (May 8, 1998) (''*CARP PSS 1998*'') (noting that ''price [is] set in the marketplace according to the laws of supply and demand. . . .''); Eisenach WDT ¶ 34 (''the interplay between supply and demand results in a market price.'')

With regard to the supply of an ''ordinary private good'' in a perfectly competitive market,[220] it is well understood that there is typically a positive correlation between price and quantity (causing the well-known upward slope of a supply curve). *See, e.g.,* C. Byun, *The Economics of the Popular Music Industry* at 74 (2016) (''The firm's supply curve is upward sloping, since the relationship between price and quantity supplied by the firm is positive.'') This positive correlation is the consequence of several factors. Among those factors is the increasing marginal physical cost of inputs required to create the product. Marx WDT ¶ 38 n.39 ('' 'Marginal cost' is defined as the increase in total cost resulting from an additional unit of output.''). The marginal cost of inputs generally increases because, *inter alia,* inputs are scarce and a seller must pay more for each unit of an input as it becomes more scarce, or if additional units are less productive. *See Krugman & Wells, Microeconomics* at 312–13 (2d ed. 2009). Additionally, input sellers must consider the *opportunity cost* of supplying an input to a particular buyer, *i.e.,* any revenue foregone by selling that scarce input to that particular buyer rather than to another buyer who was willing to pay a higher price. *See* E. Mansfield & G. Yohe, *Microeconomics* at 242 (11th ed. 2004) (''opportunity cost'' of an input is ''the value of that input if it were employed in its most valuable alternative use.'').

In this proceeding, the products being licensed by Copyright Owners to the interactive streaming services for distribution are collections (repertoires) of *additional copies* of a song embodied in a sound recording—not the original or first copy of the song or the sound recording. The marginal physical cost of such additional digital copies of a musical work embodied in a sound recording is essentially zero. *See Written Rebuttal Testimony of Marc Rysman, Ph.D.* ¶ 71 (Rysman WRT) (''Intellectual property commonly may have little to no marginal costs to reproduce. . . .''); Marx WDT ¶ 117 (''the marginal costs of providing rights to a particular musical work and streaming it to the consumer are effectively zero); *Written Rebuttal Testimony of Richard Watt (Ph.D.) (On behalf of the NMPA and the NSAI)* ¶ 44 n.48 (Watt WRT) (considering reliable Professor Marx's conclusion that ''[a] marginal cost of zero is a close approximation of true costs of delivery.''); *Expert Rebuttal Report of Glenn Hubbard, February 15, 2017* ¶ 4.20 (Hubbard WRT) (''copyrighted music work . . . has zero marginal production costs''); *Rebuttal Expert Witness Statement of Dr. Gregory K. Leonard* ¶¶ 6, 95 (Leonard WRT) (acknowledging ''the zero marginal cost of a stream''); *Corrected Written Testimony of Michael L. Katz (On behalf of Pandora Media, Inc.)* ¶ 26 (Katz CWRT) (''The creation and distribution of musical works has . . . zero or near-zero marginal costs.''); 3/30/17 Tr. 4085–40866, (Gans) (agreeing that the ''marginal physical cost'' of ''additional electronic versions of sound recordings . . . embody[ing] musical works is zero); *see generally* W. Landes, *Copyright* in R. Towse, A Handbook of Cultural Economics at 100 (2d ed. 2011) (''[T]he cost of reproducing the [copyrighted] work that additional users can be added at a negligible or even zero cost.'') So, there is an important basic distinction between the marginal physical costs associated with creating additional units of ordinary private goods and additional digital copies of songs/sound recordings.

With regard to demand, there is a negative correlation between price and quantity (causing the equally well-known downward slope of a demand curve). *See, e.g., Krugman & Wells, supra,* at 63–64. This negative correlation is also the consequence of several factors. For present purposes, two factors are pertinent. First, a buyer's demand is a function of the benefit the buyer realizes from acquiring the good—what economists term ''utility.'' Second, buyers' ability to satisfy their desire for

[216] *Written Direct Testimony of Kelly Brost.*

[217] *Written Rebuttal Testimony of Leslie M. Marx.*

[218] *Written Direct Testimony of Rob Wheeler.*

[219] *Written Direct Testimony of Leslie M. Marx.*

[220] A ''private good is ''one that is both excludable and rival in consumption,'' *i.e.,* the supplier can prevent non-payers from consuming the good, and each unit of the good cannot be consumed by more than one person simultaneously. P. Krugman & R. Wells, *Microeconomics* at pp. G–2, G–7 (2d ed. 2009). The distinction between a private good and a public good is discussed *infra.*

utility is constrained by their ability to pay—what economists call a ''budget constraint.'' To simplify somewhat, the point where a buyer's utility and ability to pay intersect represents a point on the buyer's demand curve, indicating his or her ''Willingness to Pay'' (WTP).[221] *See Byun, supra* at 26–27 (The demand curve represents a mapping of all such points, reflecting both (1) the ''intuitive'' idea that the more expensive a good, the greater its ''budget'' impact, lowering the quantity demanded; and (2) diminishing marginal ''utility,'' as reflected in the buyer's willingness to pay [(WTP)] for additional units of the good); *see also* Pindyck & Rubinfeld, *supra,* at 83, 140 (''[P]references and budget constraints . . . determine how individual consumers choose how much of each good to buy . . . choos[ing] goods to maximize the satisfaction they can achieve, given the limited budget available to them.'' . . . [C]onsumers' demand curves for a commodity can be derived from information about their tastes . . . and from their budget constraints.'').[222] The market demand curve for an ordinary private good is the horizontal sum of all quantities demanded at each price reflected in the demand curves of all potential buyers. *Byun, supra,* at 27; *Pindyck & Rubinfeld, supra,* at 141.[223]

Importantly for the present proceeding, changes *along the demand curve* (*i.e.,* changes in *quantity demanded* in response to changes in price) must be distinguished from *changes in demand, i.e.,* shifts of the *entire demand curve* representing a different quantity demanded at each price. A movement ''down the demand curve'' would reflect an increase in new buyers whose WTP was equal to the lower price as the demand curve descends, *i.e.,* whose WTP was less than higher prices along the demand curve. By contrast, an upward shift of the entire demand curve can be the consequence of several factors, including a reduction in the price of a competing (substitute) good and a change in consumer tastes. *To reiterate, this distinction between an increase in quantity demanded and an increase in demand is of particular importance in this proceeding, as will be evident as I compare and contrast the parties' economic arguments. See Krugman & Wells, supra,* at 66–67 (''[W]hen you're doing economic analysis, it's important to make the distinction between changes in the quantity demanded, which involve movements along a demand curve, and shifts of the demand curve.'').

It is also important—especially in this proceeding—to distinguish markets vertically. There are two markets implicated in this proceeding. There is the *upstream* market for the sale and purchase of inputs, here, licenses for the collected copies (entire repertoires) of musical works embodied in the streamed sound recordings. There is also the *downstream* market for the sale and purchase of the final product, comprised of both (1) the right to listen to a given sound recording/musical work; and (2) an ''option'' value,'' *i.e.,* a right to *access* a large repertoire of sound recordings/musical works. The dynamics of these two markets are different, yet they are economically intertwined. They are economically *different* in certain obvious ways, in that the upstream market consists of licensors and licensees whereas the downstream market is comprised of streaming services and listeners (subscribers or users) with the markets exhibiting different degrees of (*inter alia*) competition, market power, homogeneity and preferences among the participants in each market. However, they are *interdependent* as well, because the upstream demand of the interactive streaming services for musical works (and the sound recordings in which they are embodied)—known as ''factors'' of production or ''inputs''—is derived from the downstream demand of listeners to and users of the interactive streaming services. This interdependency causes upstream demand to be characterized as ''derived demand.'' *See Krugman & Wells, supra,* at 511 (''[D]emand in a factor market is . . . *derived demand* . . . [t]hat is, demand for the factor is derived from the [downstream] firm's output choice.'').[224]

In perfectly competitive markets for ordinary private goods, prices tend toward an ''equilibrium'' price where there is an intersection between quantity demanded (on the demand curve) and the quantity supplied (on the supply curve). In that market, the positive price equals both marginal cost and marginal benefit.[225] That price would allow for a reasonable estimation of a per unit price that economists would be able to identify, in terms of economic efficiency, as a fair market price. *See, e.g.,* G. Niels, H. Jenkins & J. Kavanagh, *Economics for Competition Lawyers* ¶ 1.4.7 (2d ed. 2016) (The ''equilibrium price'' reflects ''allocative efficiency'' on the demand side and ''productive efficiency'' on the supply side.''); Nicholson & Snyder, *supra* at 469–72 (''[P]erfectly competitive markets lead to efficiency in the relationship between production [supply] and preferences [demand]. . . .'')[226]

This snapshot of a perfectly competitive market for an ordinary private good is described in the typical ''Economics 101'' course. However, because (as noted *supra*) the marginal physical cost of supplying an additional copy of a song/sound recording is essentially zero, at least one key condition for efficient per-unit pricing *does not exist.* A price above zero would not reflect allocative efficiency, because price must equal marginal cost to create such efficiency. However, at a price of zero—that is, equal to marginal cost—no supplier would have an economic incentive to incur the cost of producing the original version of the musical work. As one scholar has summarized:

There is a conflict between the competing goals of ensuring access to intellectual

[221] Thus, it is important to keep in mind that WTP incorporates ''Ability To Pay,'' when evaluating the distinctions among the interactive streaming services' various tier offerings and the issue of price discrimination. *See* C. Sunstein, *Willingness to Pay vs. Welfare,* 1 Harv. L. & Pol. Rev. 303, 310 (2007) (noting the ''need to make a distinction . . . between WTP and ability to pay . . . . When . . . people show a low WTP, it may be because their ability to pay is low [b]ut their low WTP does not demonstrate that they would gain little *in terms of welfare* from receiving the relevant good.'') (emphasis in original).

[222] When discussing consumer demand, economists often leave implicit the distinction between the budget constraint, which reveals an ability (or inability) to pay, and the WTP, by combining both in the WTP phrase. In this Dissent, I shall use the WTP phrase in its combined form, unless distinction is of some importance in this proceeding.

[223] These two aspects of demand are reflected in the present proceeding by the services' attempts to design a ''range of products'' with different ''price points'' (reflecting consumers' varying budget constraint/WTP) and ''features to accommodate preferences'' (reflecting differences in utility). *See, e.g.,* Phillips WDT 16 (describing Pandora's design of its new interactive streaming offerings).

[224] Importantly, this economic interdependency exists as a matter of law as well as economics in this proceeding. Section 801(b)(1)(A) *explicitly* makes the link between the upstream and downstream markets relevant to the setting of upstream rates in this proceeding, by instructing the Judges to set upstream rates that ''maximize the availability of creative works to the public,'' *i.e.,* to the downstream listeners.

[225] If the market is imperfect, i.e., if the seller has some market power, then the positive price will exceed marginal cost.

[226] There are other particular requirements that must be satisfied for a market to be perfectly competitive such that the resulting price reflects these fair market efficiencies. *See Mansfield & Yohe, supra* at 290–91 (Perfect competition requires: (1) Homogeneous products across sellers; (2) no seller or buyer is so large as to affect the product price (*i.e.,* all participants are *price-takers* rather than *price-makers*; (3) all resources are completely mobile across markets, *i.e.,* they can freely enter or exit the market); and (4) all market participants (consumers, producers and input suppliers) have ''perfect knowledge'' of all relevant information.

property at a price equal to marginal cost and providing incentives for the production of information. Finding the balance between access and incentives arising from the free access and exclusive rights norms is characterized as the static/dynamic dilemma or the short-run/long-run dilemma.

D. Barnes, *The Incentive/Access Tradeoff,* 9 Nw. J. Tech. & Intell. Prop. 96, 96 (2010).

The distinction between normal private goods and intellectual property applies specifically in the markets for musical works and sound recordings. As a Canadian scholar recently explained:

For normal goods and services, the optimal level of consumption is generally considered to be the level achieved when the price of the good is equal to its marginal production cost. . . . This level corresponds to what economists call a first-best optimum, which requires that fixed costs be covered one way or another. A competitive market is generally the preferred mechanism for defining and achieving an optimal level of production and consumption for normal goods.

With information goods or assets, the problem is somewhat more difficult since the same unit . . . think of a musical work or sound recording . . . can be listened to and enjoyed many times by many different users or consumers now and in the future as consumption does not destroy or alter the unit in question.

M. Boyer, *The Competitive Market Value of Copyright in Music: A Digital Gordian Knot,* Toulouse School of Economics Working Paper at 18 (Sept. 2017) (emphasis added).[227]

Economists have analyzed and modeled this conundrum, utilizing approaches beyond those in a basic ''Economics 101'' classroom. *See* P. Samuelson, *Aspects of Public Expenditure Theories,* 40 The Rev. of Econ. & Statistics, 332, 336 (1958) (when attempting to price additional copies of public goods with marginal costs approximating zero ''the easy formulas of classical economics no longer light our way.'').

Copies of intellectual property goods, including especially electronic copies, are understood not to be ''private'' goods as in the simple model sketched *supra,* but rather are ''quasi- public goods.'' A ''public good'' has two characteristics. First, it has a zero marginal production cost (formally, they are ''non-rivalrous in consumption,'' because consumption of one unit does not prevent another unit from being consumed). Second, the provider of the public good cannot prevent consumption of the good by non-payers (formally, ''non-excludability''). *See Nicholson & Snyder, supra,* at 679. A ''quasi-public good'' (sometimes called an ''impure public good'' or a ''mixed good'') possesses only one of these two public goods characteristics. *See, e.g.,* G. Dosi & J. Stiglitz, *The Role of Intellectual Property Rights in the Development Process, with Some Lessons from Developed Countries: An Introduction* at 6, Inst. of Economics, Laboratory of Economics and Management, Working Paper 2013/23 (Nov. 2013) (defining a quasi-public good as one where either ''it is . . . hard to exclude others'' or, ''even if it were possible, it is inefficient to do so.''). In the market at issue in this proceeding, one person's accessing of a streamed copy of sound recording (and the musical work embodied within it) on an interactive streaming service is not in rivalry with another person's listening to a copy of the same sound recording/song (*i.e.,* one person's listening does not cause a marginal increase in physical cost to the licensors),[228] but the licensors can *exclude* any person from listening who does not subscribe to or register with the interactive streaming service. When piracy is uncontrolled, copies of sound recordings (and the musical works embodied therein) resemble pure public goods. When piracy is reduced, these reproductions are more in the nature of quasi-public goods, because they are still not rivalrous in consumption.

An additional complexity: The products supplied in the market (upstream and downstream) in this proceeding are not simply *individual* copies of discrete musical works. Rather, the product is the *collection* of repertoires of musical works, collectivized (through ownership, administration and distribution) by the music publishers and, in final (downstream) delivery), through the major record companies (and a constellation of smaller publishers).

These collective activities are highly concentrated among only a few such publishers. As noted *supra,* the four largest publishers—Sony/ATV ([REDACTED] percent), Warner/Chappell ([REDACTED] percent), Universal Music Publishing Group (UMPG) ([REDACTED] percent), and Kobalt Music Publishing ([REDACTED] percent)—collectively accounted for just over 73 percent of the top 100 radio songs tracked by Billboard[229] as of the second quarter in 2016. Katz WDT ¶ 46. The collective nature of the principal music publishers is further made clear from the testimony of their witnesses in this proceeding. *See Witness Statement of Peter Brodsky* ¶ 5 (Brodsky WDT) (Sony/ATV Music Publishing owns and administers ''the largest catalog of musical compositions in the world, with over [REDACTED] songs written by [REDACTED] of songwriters''); *Witness Statement of David Kokakis* ¶ 10 (Kokakis WDT) (UMPG owns and administers [REDACTED] compositions); *Witness Statement of Gregg Barron* ¶ 5 (BMG owns and administers [REDACTED] compositions); *Witness Statement of Annette Yocum* ¶ 8 (Warner/Chappell owns and administers [REDACTED] compositions).[230]

The mechanical license thus is in the nature of a blanket license (notwithstanding that the interactive streaming service must first serve a Notice of Intention (NOI) on the copyright owner in order to utilize the statutory mechanical license in connection with each individual song). 17 U.S.C. 115(b); 37 CFR 201.18). Much of the economic value of a collection of millions of copyrights within one publishing umbrella lies in the economizing on transaction costs—allowing large entities to administer the copyrights. *See generally* S. Besen, S. Kirby and S. Salop, *An Economic Analysis of Copyright Collectives,* 78 Va.L.Rev. 383 (1992); R. Watt, *Copyright Collectives: Some Basic Economic Theory,* reprinted in R. Watt (ed.),

[227] This point highlights a particular distinction between private goods and products with public good characteristics (discussed *infra*), upending the ''economic efficiency'' principles of for private goods markets taught in an ''Economics 101'' class. *See* C. Yoo, *Copyright and Public Good Economics: A Misunderstood Relation,*'' 155 U. Pa .L. Rev. 635, 638 (2007) (There is ''an interesting inversion of the conditions for the efficient allocation of private goods. For private goods, consumers pay the *same price* and signal the different valuations that they place on the good by purchasing *different quantities.* For pure public goods, consumers consume the *same quantity* of production and signal the intensity of preferences by their willingness to pay *different prices.*''). This principle is particularly applicable in response to the argument that economic efficiency is fostered by per-unit pricing in the market at issue in this proceeding.

[228] This non-rival aspect of streamed music is not only a theoretical underpinning of the interactive markets, but also is the crucial basis for the services' plans (discussed *infra*) to achieve ''scale'' and, ultimately, profitability, as discussed *infra. See generally* J. Haskel & S. Westlake, *Capitalism without Capital* at 66 (2017) (''From an economic point of view, scalability derives from . . . what economists call 'non-rivalry.' '').

[229] This Billboard measure tracks songs played on AM–FM terrestrial radio broadcasters, which are not required to license the works or the sound recordings they play.

[230] The sound recording market is also highly concentrated. *See* Marx WDT ¶ 149 (''The three major labels, Sony Music Entertainment, Inc., Warner Music Group, and Universal Music Group ('UMG'), account for roughly 65% of US recording industry revenue.''). Also, the performance rights collectives are highly concentrated, with ASCAP and BMI representing over 90% of the songs available for licensing in the United States. *See Register's Report* at 20.

*Handbook on the Economics of Copyright* at 168–170 (2014).[231]

However, along with the efficiencies of collective ownership comes the market power of the collective. As has been noted:

> In so much as copyright law establishes a . . . monopoly of each copyright holder in his or her own item of intellectual property, copyright collectives imply an even larger monopoly situation for entire specific types of intellectual property in general. Exactly how this monopoly power affects social welfare is a natural point of discussion. . . . [T]here are social costs involved when a natural monopoly[232] is run by only one firm, since that firm will not sell its output at the socially optimal price, but rather at the pure profit maximizing price. It is for this reason that most natural monopolies are subject to heavy regulation. . . . The administration and marketing of intellectual property has many aspects of a natural monopoly. . . . The fact that unregulated copyright collectives do not achieve a social optimum establishes strong theoretical foundations for arguing that such collectives should be regulated.

R. Watt, *Copyright and Economic Theory: Friends or Foes* at 163, 190 (2000); *see also* C. Handke, *The Economics of Collective Copyright Management* at 9, reprinted in Watt, *Handbook of the Economics of Copyright, supra* (entities controlling a collection of copyrights are natural monopolies).

Thus, the ''product'' that is licensed to interactive streaming services can be modeled not merely as the individual musical work or sound recording, but also as *access* to copies of a large repertoire of songs. Such access can be offered through various delivery channels, such as interactive streaming, noninteractive streaming and satellite radio.

At this point of analysis, therefore, the concept of ''opportunity cost'' is of particular importance.[233] When a collective sets the royalty rate to be paid by a distribution channel to provide such downstream access, in order to maximize profits, it must: (1) Consider potential royalty revenue from the various distribution channels; (2) determine whether these distribution channels/licensees serve overlapping downstream listeners; (3) minimize opportunity costs by attempting to equalize (on the margin) royalty revenue paid by such overlapping licensees; (4) refuse licenses to distributor categories that would ''cannibalize'' higher royalty revenues from other distribution channels; and (5) identify the distribution channels that provide access to listeners who would not otherwise pay for a higher-priced distribution channel because of their low WTP (*i.e.,* distribution channels and listeners that do not cause ''substitution'' or ''cannibalization'').

For the category of services that fall in number (5) above, licensors would negotiate a royalty without regard to opportunity cost (*i.e.,* without fear of ''substitution'' or ''cannibalization''), because *no such opportunity costs would be present. Compare Expert Report of Joshua Gans on Behalf of Copyright Owners* ¶ 50 (Gans WDT) (''The opportunity cost of licensing musical works to a given interactive streaming service depends on the royalty income lost as a result of doing so. There are numerous potential sources of that lost royalty income, including lost revenue from another interactive streaming service (that may pay higher rates), as well as lost physical sales, downloads and radio/webcasting revenue.'') *with* Hubbard WRT ¶ 4.3 (''a songwriter's opportunity cost of licensing to a service that is both market expanding and that does not ''cannibalize'' users from other services is relatively low.'').

Thus, the simple ''Economics 101'' model—which *suggests* a simple single per-unit price—is not applicable. (''We are not in Kansas anymore,'' or, to repeat Professor Samuelson's elegant phraseology, ''the easy formulas of classical economics no longer light our way.''). Accordingly, to analyze the parties' proposed rate structures, the Judges must consider economic models informed by the economic principles that reflect these market realities. Fortunately, the Judges hardly are operating in a vacuum, either in a theoretical or practical sense, given the testimony provided by the economic witnesses in this proceeding.

One analytical approach to the issues raised by the economics of copyrights involves the application of concepts from the sub-field of ''welfare economics.'' As one of Copyright Owners' economist-experts noted, the pricing issue raised in this proceeding invokes principles from the branch of this sub-discipline. 3/27/17 Tr. 3032 (Watt) (defining ''welfare economics'' informally as ''what economists use when we talk about efficiency and we talk about producer/consumer surplus and things like that.'')[234]; *see also* Pindyck & Rubinfeld, *supra,* at 590 (defining ''welfare economics as the ''normative evaluation of markets and economic policy.''). A core principle of welfare economics, and thus of economics *writ large,* is the ''theory of the second best.''[235] Simply stated—and in a manner applicable here—the theory provides: ''When it is not possible to obtain the most desirable economic outcome in a situation—*marginal cost pricing in this case*—society has to compromise and accept the next most desirable outcome.'' A. Schotter, *Microeconomics: A Modern Approach* at 427–428 (2009) (emphasis added).[236] It is accurate to state that the Judges' practical task in this case is to determine a rate structure and rates that are economically ''second best'' in this economic context and satisfy the *legal* requirements of section 801(b)(1).

Because the theory of the second best by its very nature does not provide for a single ''first best'' outcome, it provides ammunition for all economic experts in this proceeding to use to take pot shots at the models and proposals put forth by their adversaries. If no alternative is ''first best,'' then each suffers from *some* imperfection or market distortion compared with the unattainable ''first best'' outcome in a perfectly competitive market. But because the ''first best' solution is unattainable, levying such criticisms is akin to shooting fish in a barrel.

The salient criticisms, and the difficult task for this tribunal, involve

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[231] The economic concept of a collective organization is broader than the more common and narrow conception of ''collection societies'' as limited to PROs. *See* A. Katz, *Copyright Collectives: Good Solution, But for Which Problem,* at 2, n.7, *reprinted in* R. Dreyfuss & D. Zimmerman (eds.) *Working Within the Boundaries of Intellectual Property Law* (2010) (''The term 'copyright collectives' encompasses various types of organizations, with different mandates, structures, forms of governance and regulatory oversight.'').

[232] When large publishing houses or major record labels control large swaths of the market, and their products are ''must haves,'' they are ''complementary oligopolists'' rather than monopolists, a difference that leads to supranormal pricing and greater inefficiencies than arise from monopoly. *See Web IV,* 81 FR 26316, 26348 (May 2, 2016).

[233] To repeat, the ''opportunity cost'' of using an input is the foregone value of the most highly-valued *alternative* use of that input. *See generally Pindyck & Rubinfeld, supra,* at 689 (defining ''opportunity cost'' as the ''[c]ost associated with opportunities that are foregone when a firm's resources are not put to their best alternative use.'').

[234] It should be noted that Professor Watt decidedly rejects the applicability of welfare economics as a tool with regard to Factor A of section 801(b)(1)—unless ''availability'' were to be equated with ''use'' of copyrighted musical works. *See id.* at 3033.

[235] The ''Theory of the Second Best'' was originally developed more than sixty years ago. *See R. G. Lipsey and K. Lancaster, The General Theory of Second Best,* 24 Rev. Econ. Stud. 11 (1956–1957).

[236] As Professor Marx notes, the first theorem of welfare economics provides ''that the allocation of resources is efficient in a general equilibrium with perfect competition, and in a perfectly competitive market, price equals firms' marginal cost. Marx WDT ¶ 116 n.129 (citing B. Douglas Bernheim and Michael D. Whinston, *Microeconomics* 561–62, 601–02).

weighing various ''second best'' alternatives, as presented through—*and limited by*—the record, to identify the rate structure that better satisfies the statutory criteria, as construed by the D.C. Circuit and prior applicable determinations and decisions by the Judges, their predecessors, the Librarian and the Register. *See* 17 U.S.C. 803(a)(1).

At the theoretical extremes are two unacceptable approaches to rate-setting: (1) setting price equal to the marginal physical cost of copying, which is zero; and (2) setting price on a per unit basis that exceeds marginal physical cost. In the chasm between these two inadequate approaches exist many alternative rate structures with varying rates for various segments of the market. In general terms, these alternative rate-setting structures are forms of ''price discrimination,'' which, in the broadest sense, means simply a departure from a single, per-unit price. *See, e.g.,* H. Varian, *Intermediate Microeconomics: A Modern Approach* 462 (2010) (defining ''price discrimination'' as''[s]elling different units of output at different prices''). For example, rates based on a percent-of-revenue (even without any alternative rate prongs) are themselves a blunt form of price discrimination. J. Cirace, *CBS* v. *ASCAP: An Economic Analysis of a Political Problem,* 47 Ford. Rev. 277, 288 (1978) (''A license fee based upon a percentage of gross revenue is discriminatory in that it grants the same number of rights to different licensees for different total dollar amounts, depending upon their ability to pay [and] [t]he effectiveness of price discrimination is significantly enhanced by the all-or-nothing blanket license.''); W.R. Johnson, *Creative Pricing in Markets for Intellectual Property,* 2 Rev. Econ. Rsch. Copyrt. Issues 39, 40–41 (2005) (identifying revenue sharing licenses as a form of price discrimination).[237]

The Judges have utilized a price discriminatory approach previously to reflect a segmented marketplace. In *Web IV,* the Judges set three *different* per play royalty rates for sound recording licenses for noninteractive services pursuant to section 114; one rate for ad-supported services; a higher rate for subscription services; and a lower rate for educational broadcasters. *See Web IV, supra,* 81 FR at 26346, 26405, Likewise, in the rate court, the royalty rate paid to songwriters for performances on noninteractive services is lower than the rate paid for performances on interactive services. *See In re Pandora Media,* 6 F.Supp.2d 317, 360 (S.D.N.Y. 2014), *aff'd sub nom Pandora Media, Inc.* v. *ASCAP,* 785 F.3d 73 (2d Cir. 2015) (setting noninteractive performance royalties paid by noninteractive services below the rate by interactive services, and noting that ''[i]f there was one principle regarding rate structure on which the parties agreed at trial it was that the rate for customized radio should be set below the rate for on-demand interactive services.'').

Perfect price discrimination (*i.e.,* ''first-degree'' price discrimination) is essentially not possible. (For example, a senior discount may be afforded to a millionaire who has a WTP, based in part on income, far above the price imputed in his or her senior discount.) *See generally Nicholson & Snyder, supra,* at 505 (''First-degree price discrimination poses a considerable information burden for the monopoly—it must know the demand function for each potential buyer.''). However, the existence of any imperfection, whether in a price discriminatory royalty or any royalty, is not indicative of the unacceptability of the price structure as an appropriate benchmark or statutory rate structure. Rather, such imperfections must be weighed against the imperfections in any other proffered pricing structure. Thus, when a regulator is tasked with rate-setting, the process inescapably requires the use of informed judgment in order to consider the competing benefits and costs of any proposed rate structures and levels. *See generally* 1 A. Kahn, *The Economics of Regulation* 198 (1970) (''The decision about what kinds of modifications second-best considerations recommend can be made only by looking at the facts in each individual case. No set of economic principles can substitute for the use of judgment in their application.''). In the present context, that judgment is informed through the adjudicatory process that places the economic experts of the licensors and licensees in an adversarial proceeding, revealing the strengths and weaknesses of their approaches, through direct and rebuttal written testimony, direct and cross-examination, and inquiries from the Judges.[238]

I consider these various approaches in the context of the foregoing economic principles.

**G. The Parties' Proposals**

**1. The Services (*i.e.,* excluding Apple)**

The Services propose respective rates and rate structures that—while varying in their particulars—share a number of common elements. Broadly, the Services propose a rate structure that in the main continues the current rate structure. More particularly, the Services' proposals share the following core elements:

(1) the rate should *continue* be set as an ''*All-In*'' rate for musical works licenses, *i.e.,* a mechanical rate that permits all services to deduct royalties paid to the same rights holders and their agents for performing rights;

(2) the rate should *continue* to be structured as a percentage of revenue, subject to certain minima; and

(3) the ''*All-In*'' headline rates should continue, with the subpart B headline rate maintained at 10.5% of revenue.

However, the Services propose that the ''Mechanical Floor'' in the existing rate structure be *discontinued.*

The principle additional and differing particulars of the rate structures proposed by each Service are set forth below.

**a. Amazon**

In its May 11, 2017 ''Proposed Rates and Terms'' (*Amazon Proposal*), Amazon proposes that the rate structure as currently set forth in the applicable regulations should rollover into the 2018–2022 rate period, except as otherwise proposed by Amazon. *Amazon Proposal* at 1. In that regard, the following elements comprise the core structure of Amazon's proposed

[237] Even in the case of an ordinary private good with increasing marginal costs, sellers will prefer to price discriminate, increasing the ''producer surplus'' and shrinking the ''consumer surplus,'' if they can identify the WTP of different segments of the demand curve and can avoid after-market arbitrage (*i.e.,* avoiding low WTP buyers re-selling to higher WTP buyers and thus depriving sellers of the benefits of price discrimination). *See Nicholson & Snyder, supra,* at 503 (''whether a price discrimination strategy is feasible depends crucially on the inability of buyers of the good to practice arbitrage.''). Further, sellers of cultural goods generally use price discrimination when they have excess supply and temporally-limited demand. *See* W. Baumol, *Applied Welfare Economics,* in R. Towse, *A Handbook of Cultural Economics* at 26 (1st ed. 2003) (noting that for theatres ''[s]olvency generally requires price discrimination,'' thereby avoiding the economic loss arising from ''half-empty theatres''). Moreover, even sellers of all sorts of goods, and *even in a competitive market,* will find it rational to attempt to use price discrimination whenever it becomes apparent that marginal sales at lower prices to low WTP buyers will at least cover some fixed costs. *See* W. Baumol, *Regulation Misread by Misread Theory: Perfect Competition and Competition-Imposed Price Discrimination* at 6 (2005) (''[U]nder competitive conditions the firm will normally be forced to adopt discriminatory pricing wherever . . . feasible. . . . [U]niform pricing is not to be taken as the normal characteristic of equilibrium of the competitive firm.''). Thus, the ''general'' per-unit pricing presented in Economics 101 may not be quite so ubiquitous, placing any per-unit pricing proposal in this proceeding on even more tenuous grounds.

[238] Thus, in contrast with the Majority Opinion, this Dissent does not attempt to arbitrarily select disparate elements from the record to create, post-hearing, *a rate structure that was not subject to this adversarial process.*

rate structure that would constitute changes in the current regulations:

• The per subscriber minimum and/or subscriber-based royalty floors for a ''family account'' should equal 150% of the per subscriber minimum and/or subscriber-based royalty floor for an individual account.
• A student subscription account discount of 50% should be included in the regulations to the per subscriber minimum and subscriber-based royalty floor that would otherwise apply under the current regulations.
• A discount for annual subscriptions equal to 16.67% of the minimum royalty rate (or rates) and subscriber-based royalty floor (or floors) that would otherwise apply under § 385.13.
• A 15% discount to the minimum royalty rate (or rates) and subscriber-based royalty floor (or floors) to reflect a service's actual ''app store'' and carrier billing costs, not to exceed 15% for each.

*Amazon Proposal* at 1–2.

**b. Google**

As noted *supra,* in its May 11, 2017 ''Amended Proposed Rates and Terms'' (*Google Amended Proposal*),[239] Google proposes a rate structure that combines certain elements, eliminates other elements and uses specific rates, together *in a combination that was not presented at the hearing.*[240] Specifically, the *Google Amended Proposal* set forth a rate structure that ''eliminat[es] . . . different service categories'' and replaces them with ''a single, greater-of rate structure between 10.5% of net service revenue and an uncapped 15-percent TCC component.'' *Id.* at 1.[241] Similar to one of Amazon's proposals, Google also seeks a discount in rates for ''carrier billing costs'' and ''app store commissions,'' plus ''credit card commissions'' and '''similar payment process charges,'' all not to exceed 15%. *Id.* at 6 (for subpart B); 26 (for subpart C).[242]

Google also proposed a new rate of 13% of the record company's total wholesale revenue from the music bundle in accordance with GAAP for the provision of music bundles under subpart C, where the record company is the licensee. *Google Amended Proposal* at 33–34. Additionally, Google proposed a new royalty of 15% ''of the applicable consideration expensed by the service, if any . . . incremental to the applicable consideration expensed for the right to make the relevant permanent digital downloads and ringtones.'' *Id.* at 34.[243]

However, Google is in favor of the general elements of the Services' proposal, set forth *supra,* if the Judges were to: (a) reject its amended proposal *in toto, see Google's Proposed Findings of Fact and Conclusions of Law* ¶ 8 (Google PFF); or (b) adopt Google's amended proposal but incorporate a TCC rate greater than the 15% proposed by Google. *See id.* ¶ 47.

**c. Pandora**

In its May 11, 2017 ''Proposed Rates and Terms (As Amended)'' (*Pandora Amended Proposal*),[244] Pandora seeks the following changes from the current regulations:

• Elimination of the alternative computation of subminimums I and II now in § 385.13 and in § 385.23 (for subparts B and C respectively) ''in cases in which the record company is the Section 115 licensee.''
• A broadening of the present ''not to exceed 15%'' reduction of ''Service Revenues'' in § 385.11 to reflect, *in toto,* an exclusion of costs attributable to ''obtaining'' revenue, ''including [but not expressly limited to] credit card commissions, app store commissions, and similar payment process charges.'' [245]
• A discount on minimum royalties for student plans ''not to exceed 50%'' off minimum royalty rates set forth in § 385.13.

*Id.* at 1, 7.

**d. Spotify**

In its May 11, 2017 ''Second Amended Proposed Rates and Terms'' (*Spotify's Second Amended Proposal*), Spotify seeks the following changes from the current regulations:

• For all licensed activity, the ''mechanical-only'' royalty floor should be removed, *i.e.,* removed from §§ 385.12(b)(3)(ii) and 385.13(a)(1) & (3) for: (a) standalone non-portable subscription-streaming only; and (b) standalone portable subscriptions service.
• A broadening of the present ''not to exceed 15%'' reduction of ''Service Revenues'' in § 385.11 to reflect, *in toto,* an exclusion of the actual costs attributable to ''obtaining'' revenue, ''including [but not expressly limited to] credit card commissions, app store commissions similar payment process charges, and actual carrier billing cost.''

**2. Apple**

Apple proposed that the Services pay or $0.00091 for each non-fraudulent stream of a copyrighted musical work lasting 30 seconds or more. *Apple Inc. Proposed Rates and Terms* (as amended) at 3–4. Apple proposed defining a use as any play of a sound recording or a copyrighted work lasting 30 seconds or more. Additionally, Apple proposed an exemption for a ''fraudulent stream,'' which it proposes be defined as ''a stream that a service reasonably and in good-faith determines to be fraudulent.'' *Id.* at 2.

For paid locker services, Apple proposes a $0.17 per subscriber fee, also as a component of an ''All-In'' musical works royalty rate that would include the ''Subpart C'' royalty, the mechanical royalty, and the public performance royalty. *Id.* at 7–8. For purchased content locker services, Apple proposes a zero royalty fee. *Id.* at 7.

**3. Copyright Owners**

The Copyright Owners proposed that the Judges adopt a unitary greater-of rate structure for all interactive streaming and limited downloads that are currently covered by Subparts B and C.[246] Copyright Owners' Amended Proposed Rates and Terms, at 3 (May 11, 2017) (Copyright Owners' Amended Proposal). The proposal was structured as the greater of a usage charge and a per-user charge. Specifically, each month the licensee would pay the greater of (a) a per-play fee ($0.0015) multiplied by the number of interactive streams or limited downloads during the month and (b) a per-end user [247] fee

[239] The *Google Amended Proposal* amended its original proposal filed on November 1, 2016. Google originally proposed a subpart B rate structure that generally followed the existing structure. *Google Written Direct Statement, Introductory Memorandum* at 3 (Nov. 1, 2016).

[240] Google's post-hearing proposal appears to have been an impetus for the majority to invent its own post-hearing structure of rates, albeit different in its particulars even from Google's post-hearing proposal.

[241] As noted *supra,* ''TCC'' is an industry acronym for ''Total Content Cost.''

[242] Google describes this proposed change as a change in the definition of ''Service *Revenue,*'' unlike Amazon, which described its proposed 15% discount as a change in *rates.* The difference is mathematically irrelevant, and, for the sake of completeness and consistency, these 15% discount proposals are treated here as proposed changes in *rates.*

[243] Google's proposed single 10.5% TCC rate does not include the ''Mechanical-Only Floor'' that Pandora and Spotify expressly seek to eliminate. The ''Mechanical-Only'' Floor, found in 37 CFR 385.15, ensures that music publishers and songwriters will receive no less than a fixed per-subscriber amount of between $0.25 and $0.50, regardless of the amount that remains after deduction of musical works performance royalties from the ''All-In'' rate.

[244] The *Pandora Amended Proposal* superseded its original proposal filed on November 1, 2016, by adding definitions (for ''fraudulent streams'' and ''play'') that do not *directly* relate to the royalty rates. *See Pandora Media, Inc.'s Proposed Findings of Fact and Conclusions of Law* Appx. C (Pandora PFFCOL).

[245] Pandora does not expressly describe this change as a change in rates *per se.*

[246] The Copyright Owners' rate proposal would apply the subpart A rates to so-called ''music bundles'' (''offerings of two or more Subpart A products to end users as part of one transaction'') which are currently covered by subpart C. Id. at 3 nn. 2 & 4.

[247] Copyright Owners' original proposal defined ''end user'' as any person who ''had access'' to a standalone music service. *Id.* at 8–9. However, Copyright Owners narrowed their proposed definition of ''end user'' to include any person who (a) pays a fee for access to a standalone music

Continued

($1.06) multiplied by the number of end users during the month. *Id.* at 8. The license fee would be for mechanical rights only, and would not be offset by any performance royalties that the licensee paid for the same activity (*i.e.,* the existing ''All-In'' aspect of the rate structure would be eliminated). *Id.*

### H. The Structure of the Rates for the Forthcoming Rate Period

#### 1. Per-Play or Percent of Revenue (with Minima)

##### a. Copyright Owners'/Apple's Argument for a Per-Unit Rate [248]

Copyright Owners and Apple emphasize that a per play royalty rate structure, as compared with a percent of revenue-based structure, provides transparency and simplicity in reporting to songwriters and publishers, because it requires only one metric besides the rate itself—the number of plays, making it much easier to calculate and report, and for songwriter/licensors to understand. *See, e.g.,* Rysman WDT ¶ 56; Wheeler WDT ¶ 19; *Expert Report of Anindya Ghose November 1, 2016* ¶¶ 83–84 (Ghose WDT); Ramaprasad WDT ¶ 41; Brodsky WDT ¶ 76; 3/22/17 Tr. 2476–78 (Dorn); 3/22/17 Tr. 2855–56 (Ghose). Relatedly, Copyright Owners argue that a transparent metric tied to actual usage is superior because, under the alternative percent-of-revenue approach, services can manipulate revenue through bundling, discounting, and accounting techniques. Licensors also note that licensees' might defer service revenues and emphasize increasing market share rather than profits. Rysman WDT ¶¶ 43–45.

Copyright Owners and Apple contrast their proposed per play approaches with the current rate structure, which they characterize as cumbersome and convoluted. They emphasize that under the current rate structure, the services must perform a series of different greater of and lesser of calculations, depending on a service's business model, to determine which prong of the rate structure is operative. *Proposed Findings of Fact of Copyright Owners* ¶ 16 (COPFF) (and record citation therein). Copyright Owners assert that because of this complexity, publishers and songwriters cannot easily verify the accuracy of data the services input when calculating royalty payments. *See* Brodsky WDT ¶ 76; Ghose WDT ¶¶ 80, 81, 82; Ramaprasad WDT ¶¶ 4, 38, 42–44; Rysman WDT ¶ 57; 3/23/17 Tr. 2865 (Ghose); 3/22/17 Tr. 2477–78 (Dorn).

Beyond the issue of complexity, Copyright Owners and Apple argue that interactive streaming services do not need the present *upstream* rate structure in order to adopt any particular *downstream* business model. Rather, Copyright Owners and Apple assert that a per-play structure would establish a level of equality in the royalty rates across these services, without regard to business models, and the services could price downstream in whatever manner they choose. But regardless of the downstream pricing structure, songwriters and publishers would be paid on the same transparent, fixed amount—without advantaging any one business model over another. *See, e.g.,* 3/23/17 Tr. 2849, 2863 (Ghose)

Thus, Copyright Owners and Apple maintain that a royalty based on the number of *plays* aligns the compensation paid to the creators of the content with the *actual demand* for and consumption of their content. Ghose WDT ¶ 84; Rysman WDT ¶¶ 9, 58; *Testimony of David Dorn* ¶ 33 (Dorn WDT).

Copyright Owners further argue that the present rate structure's failure to measure royalties based on per play consumption is counterintuitive, because it permits a decreasing *effective* per play rate even as the quantity of songs that listeners ''consume'' via interactive streaming is increasing. Israelite WDT ¶ 39. Copyright Owners note, for example, that listening to [REDACTED] increased from [REDACTED] streams in July 2014 to [REDACTED] streams in December 2016, a *fifteen-fold increase in the number of streams.* Hubbard WRT, Ex. 1; *id.* at WRT ¶ 2.22; 4/13/17 Tr. 5971–72 (Hubbard). However, contemporaneously [REDACTED] *mechanical royalty payments to the Copyright Owners only increased* [REDACTED]. (Hubbard WRT ¶ 3.9; 4/13/17 Tr. 5971–73 (Hubbard). The upshot, Copyright Owners assert, is that, as streaming consumption increased dramatically from 2014 to 2016, the effective per stream mechanical royalties paid by [REDACTED] to Copyright Owners decreased from [REDACTED]to [REDACTED]. 4/13/17 Tr. 5972–73 (Hubbard).

Finally, Copyright Owners assert that a per-unit rate is appropriate because a musical work has an ''inherent value.'' *See, e.g.,* Israelite WDT at 10; ¶¶ 29(B), 30, 31(C); Brodsky WDT ¶ 68 At the hearing, NMPA's president, Mr. Israelite explained how he construes the ''inherent value'' of a musical work: ''[W]homever owns an individual copyright is the one to define it. I think that would be the most appropriate definition of it. What someone is willing to license it for would be that inherent value to that owner. That would be my view. . . . That would be the market value.'' 3/29/17 Tr. 3707 (Israelite).

##### b. The Services' Arguments in Opposition to a Per-Play Rate Structure

The Services make several arguments in opposition to the use of a proposed per-play royalty rate. The overarching theme of these arguments is that an inflexible ''one size fits all'' rate structure would be ''bad for services, consumers, and the copyright owners alike.'' *Services' Joint Proposed Findings of Fact and Conclusions of Law* at p. 89 (SJPFF).

First, they argue that an upstream per-play rate would not align with the downstream demand for ''all-you-can-eat'' streaming services. As Professor Marx testified, a per stream fee introduces a number of distortions and inefficiencies, encouraging a capping of downstream plays and reduces incentives for services to meet the demand of consumers ''who are going to stream a lot of music.'' Marx WDT ¶¶ 130–131. In this vein, Pandora's then president, Michael Herring, noted that a per-play consumption-based model where the revenue is fixed per user creates uncertainty and volatility around prospective margins, and the uncertainty discourages investment and hampers profitability. 3/14/17 Tr. 894–95 (Herring). Mr. Herring notes that this a general economic problem that occurs when a retail subscription business has fixed subscription revenues per customer but costs that are variable and unpredictable because the downstream quantity of units accessed are themselves variable and unpredictable. *Written Rebuttal Testimony of Michael Herring* ¶ 17 (Herring WRT); 3/14/17 Tr. 894–98 (Herring). *See also* Mirchandani WDT ¶ 39 (one-size-fits-all rate is not ''offering agnostic'' as Copyright Owners claim, but rather is ''offering determinative.'')

Second, the Services argue that there is no ''revealed preference'' in the marketplace for musical works and sound recordings for a per-play royalty, as opposed to a percent of revenue royalty (with minima). In particular, they point out that mechanical royalties have never been set on a per play basis. *See* Herring WRT ¶ 19. The Services

service offering licensed activity during the relevant accounting period, or (b) makes at least one play of licensed activity during the relevant accounting period. This would apparently have the effect of, for example, excluding as an ''end user'' any Amazon Prime member or listener to Spotify's ad-supported service who did not listen to any song in the accounting period. *Copyright Owners' Amended Proposal* at 8.

[248] Copyright Owners' per-unit proposal contains two prongs in a greater-of structure. The first is a per-play prong, and the second is a per-user prong. The greater-of proposal is considered *infra.*

also point to the direct licenses interactive services regularly enter into with music publishers, PROs and record companies—[REDACTED]. SJPFF ¶¶ 174–75 (and record citations therein). They acknowledge that some of the agreements with record companies contain alternative *per-user* prongs, *id.*¶ 175, but they note that this is consistent with the existing rate structure which already contains a per subscriber minima, but not a per play prong. Further, the Services note that [REDACTED]. *See* 3/23/17 Tr. 2857 (Ghose); *see also* 3/22/17 Tr. 2479 (Dorn) (Apple paying [REDACTED] rate under direct licenses with publishers).

Third, the Services discount the argument that Copyright Owners' proposed rate structure is superior to the present rate structure because the latter is too complicated or cumbersome. They characterize this criticism as ''overblown,'' and further take note that the detailed nature of the structure is designed to ameliorate any problems associated with the use or calculation of a revenue-based headline rate, by the inclusion of per subscriber and TCC minima. SJPFF ¶ 174. They further note that section 801(b)(1) does not list as a criteria or objective that the rates must be simple or easy for songwriters to understand, or otherwise ''transparent.'' *Services' Joint Reply to Apple Inc.'s Findings of Fact and Conclusions of Law* at 34, 36 (SJRPFF–A). Thus, they argue, the Judges cannot jettison an otherwise appropriate rate structure because some unquantified segment of the songwriting community might be uncertain as to how their royalties were computed.

Finally, separate from these arguments against per-play rate proposals, the Services note a vexing problem related to Apple's specific proposal: How to convert the typical percent-of-revenue *performance royalty* into a per play rate in order to subtract it from Apple's proposed per play mechanical rate, so as to calculate the ''All-In'' rate? (This problem is irrelevant to Copyright Owners' proposal, because they propose the elimination of the ''All-In'' provision in the rate structure.) The Services note that Apple Music's Senior Director, David Dorn, was unable to explain how this calculation would be made. *See* 3/22/17 Tr. 2508–09 (Dorn). Thus, the Services assert that Apple's proposal would introduce ''more complexity, not less.'' SJRPFF–A at 34.

**2. An Issue within the Per-Unit Approach: Copyright Owners' ''Greater-Of'' Rate Proposal**

Copyright Owners propose a ''greater of'' per-unit structure, whereby the royalty would equal the greater of $.0015 per play and $1.06 per-end user per month. In support of this approach, Copyright Owners assert that it establishes a value for each copy that is independent of the services' business models and pricing strategies. Rysman WDT ¶ 89. They argue that the greater of structure is not any more complicated than a per play rate alone—and much less complicated than the 2012 rate structure—because adding a per-user royalty rate to the structure requires only one additional metric for royalty calculation—the number of users. Brodsky WDT ¶ 76. Copyright Owners also assert that their greater-of structure is a usage-based approach, aligned with the value of the licensed copies because each rate tier is tied to a ''particular use,'' as it couples rates with usage and consumption. CORPFF–JS at p. 22. Finally, Copyright Owners note that in music licensing agreements it is not uncommon to find royalty rates set in a greater of formula that includes a per user and a per play prong (as well a percent-of-revenue prong). *See* CORPFF–JS at p. 97 (and record citations therein).

The services (*i.e.,* including Apple) assert that the greater-of aspect of Copyright Owners' rate proposal would lead to absurd and inequitable results, well above the rates established under Copyright Owners' per-play rate prong. This point is explained in detail by Professor Ghose, one of Apple's economic expert witnesses. Professor Ghose explains that under Copyright Owners' greater of structure, interactive streaming services would pay under the per-user prong if the average number of monthly streams per user was less than 707. 4/12/17 Tr. 5686–5687 (Ghose). Thus, such a service would be required to pay the $1.06 per user rather than $0.0015 per stream. *Id.* at 5687. As an example, Professor Ghose used a hypothetical scenario in which a service had one user who listened to 300 streams in a given month. Under Copyright Owners' $0.0015 *per play* prong, the service would pay $ 0.0015 × 300, equal to $.45 in royalties. Under its *per user* prong, the service would pay a royalty of $1.06 for the one user, which is an *effective* per play rate of 1.06 ÷ 300, which equals effectively $ 0.0035 per play, more than two times the $0.0015 rate under the stated per play prong. 4/12 Tr. 5687 (Ghose).

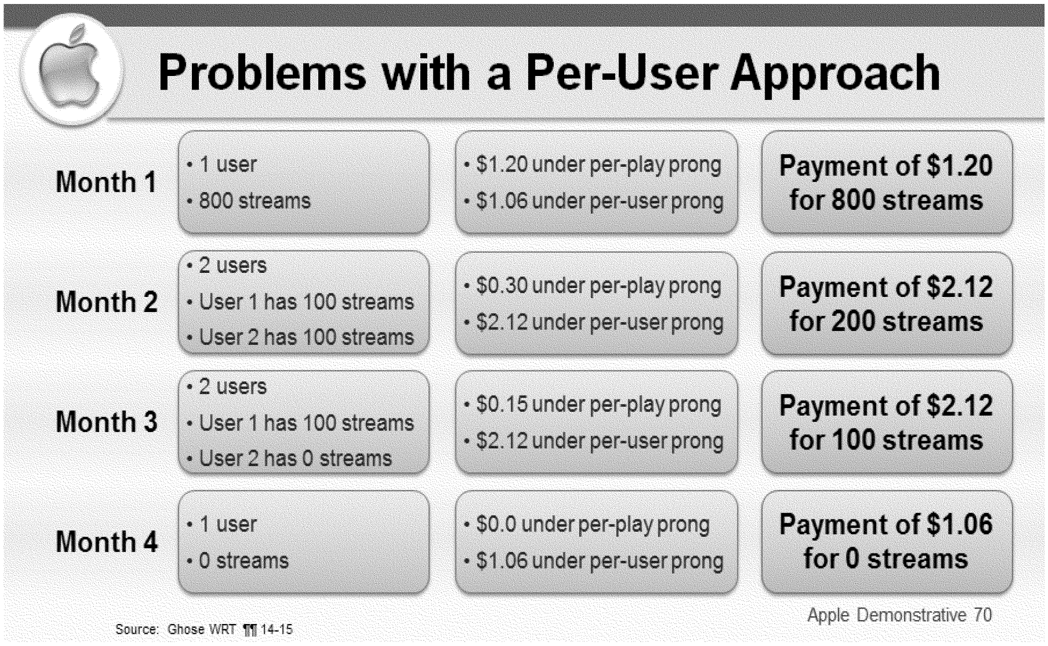
Importantly, Apple argues from the record evidence that Professor Ghose's example is representative, because services monthly streams have historically been less than 707. More granularly, relying on data in Dr. Leonard's written rebuttal testimony, Apple contends that the annual weighted average number of streams per-month per-user across current Subpart B and Subpart C services has always been below [REDACTED] in each year from 2012 to 2016. *See* Leonard WRT Ex. 3b. More particularly, the number of monthly per user streams for each of those five years was [REDACTED] (in 2012), [REDACTED] (in 2013), [REDACTED] (in 2014), [REDACTED] (in 2015) and [REDACTED] (in 2016). *Id.* Additionally, the average number of streams per-month per-user has exceeded 707 (which would trigger the per play prong) [REDACTED] according to the service-by-service data. *Id.* (Deezer averaged [REDACTED] streams in 2014 and Tidal averaged [REDACTED] streams in 2016. *Id.*) Apple argues that this historical data indicates that the services would consistently pay more than the $0.0015 per play rate. *See Apple Inc.'s Findings of Fact and Conclusions of Law* ¶ F284 (Apple PFF).[249]

According to Apple, even Copyright Owners' own expert, using different data, found that [REDACTED] services he reviewed would have been required to pay under the per-user prong in December 2015, if the Copyright Owners' proposal had been in effect. Rysman WRT ¶ 87, Table 1. In like fashion, Professor Rysman's data for December 2014 data indicated that [REDACTED] services would have been required to pay under the per-user prong. *Id.* at Table 2.

Professor Ghose expands the hypothetical scenarios in an attempt to

[249] This analysis also underscores the inaccuracy of Copyright Owners' claim that each stream of a musical work has ''inherent value.'' *See,* e.g., Israelite WDT ¶ 39 (It ''makes no sense'' if ''[e]ach service effectively pays to the publisher and songwriter a different per-play royalty.'') But in reality, Copyright Owners understand that each musical work also contributes to a different value—access value (what economists call ''option value'')—when the musical works are collectivized and offered through an interactive streaming service, resulting in different effective per play rates paid by services if the per user prong is triggered. To explain this inconsistency, Copyright Owners note the existence of a second ''inherent value''—the access or option value noted above—not created by the songwriter in his or her composition—but rather created by the publisher to provide a separate value for the user—who inherently values access to a full repertoire. But these two purportedly ''inherent'' values are inconsistent (which is why there are two prongs in the proposal) and, given the heterogeneity of listeners, neither value is homogeneous throughout the market.

demonstrate what he considers to be the absurdity of Copyright Owners' greater-of approach, as depicted in his chart, reproduced below:




*See* 4/12/17 Tr. 5681-83 (Ghose).

Copyright Owners do not dispute these analyses. Rather, they make two points. First, they claim that the binding nature of the per user prong is not problematic, because the [REDACTED]. *See Copyright Owners' Reply to Apple's Proposed Findings of Fact and Conclusions of Law* at 104 (CORPFF–A). I find this argument to be a *non-sequitur,* because sound recording rates in this context certainly have no bearing on the present issue, and Copyright Owners also do not indicate which prong would otherwise apply in those sound recording licenses. In fact, a review of the citations in CORPFF–A at 104 reveals that [REDACTED]. *See* COPFF ¶ ¶ 72, 91–92, 95.

Second, as noted *supra,* Copyright Owners attempt to support what appear to be absurd effective per play rates by explaining that the per user rates reflect the value of *access* to the repertoires, as opposed to the value of an individual stream—again, what economists refer to as an ''option price. *See* CORPFF–A at 104–105 (and citations therein). I agree that this access or option value is real. However, when such a value is inserted into a greater-of rate formula—where the access value is supplanted by the per play value, and vice versa– the pricing resembles a game of ''heads I win, tails you lose.'' Moreover, as noted *supra,* the marginal physical cost of an additional stream is zero, so it is economically inefficient to marry a per play fee to a per user fee in a *greater of* approach. *Cf.* Leonard 3/15/17 Tr. 1122–23 (Leonard) (efficient pricing would utilize an up-front fee and a zero per play fee thereafter).

None of the parties presented any economic or policy analysis of such a ''greater-of'' formula aside from its witnesses' own testimonies. Further, I did not identify any such academic or industry analyses of this ''greater-of'' approach. However, the Copyright Board of Canada has criticized this type of rate structure in the following manner, which I find persuasive:

> [A] ''greater-of'' tariff [*i.e.,* rate] would not be fair and equitable, because it would provide an undue advantage to [licensors] on two counts. To be fair and equitable, a tariff should neither overcompensate nor undercompensate rights owners. If set correctly, neither a per-play rate nor a percentage-of-revenue rate will tend to do so, to the extent that each captures a (different) measure of usage. On the other hand, a tariff set at the greater of those two rates is hedged in favor of the collective. It may prevent undercompensation if a service has low revenues; it does not prevent overcompensation in the case of a high-revenue service that uses few sound recordings. A greater-of formulation also burdens users with an unfair share of risks. [Licensors] benefit[ ] if there are high revenues and a large number of plays, if there are high revenues and a small number of plays, and if there are low revenues and a large number of plays. Only if there are low revenues and a small number of plays does the user benefit. By contrast, either a per-play or a percentage-of-revenue tariff, with or without a minimum fee, allocates risk between [licensors] and the users more evenly.

Copyright Board of Canada, *Statement of Royalties . . . Re:Sound Tariff 8—Non-interactive and Semi-interactive Webcasts 2009–2012,* Decision of the Board at 27–28 (May 16, 2014).

I recognize that the 2012 rate structure also contains a greater-of formula. Importantly, though, the alternative prong is not a per play prong, avoiding the unfairness identified in the Canadian Judges' opinion. Also, the 2012 greater-of structure was a *negotiated bargain,* indicating a revealed preference among all potential alternatives. Moreover, the alternative to the percent-of-revenue prong is itself a ''lesser-of'' formulation, dampening the impact of the ''greater-''of'' structure. Thus, the 2012 rate structure has the effect of moderating the negative impact of a greater of formulation such as proposed by Copyright Owners by keeping rates, calculated on either prong, on bases and at levels the parties agreed were acceptable.

In sum and as explained *supra,* many economic trade-offs must be weighed in establishing pricing in this second-best scenario. Some rate structures tend to balance the several factors and thus are reasonable, whereas others may tend to favor one side of the transaction over the other and do not meet the standard of reasonableness. Copyright Owners' greater-of approach represents such a one-sided structure, and accordingly I would reject this structure.

**3. The Services' Argument for a Percent-of-Revenue Structure (with Minima)**

**a. The Services' General Benchmark**

Returning to the issue of per-unit pricing vs. percent-of-revenue pricing (with minima), the Services propose a rate structure for Subparts B and C that generally follows the structure set forth in the existing regulations adopted after the Judges approved the parties' 2012 settlement.[250] The Services emphasize that they are not simply advocating that the basics of the 2012 rate structure should be preserved merely because there is a benefit in preserving the *status quo. See* 3/13/17 Tr. 564 (Katz) (relying on the 2012 structure as an excellent benchmark, ''not because it's the *status quo.*'').

Rather, the Services, through their economic experts, put forth the 2012 rate structure (*sans* Mechanical Floor) *as an appropriate benchmark*—for the Judges to weigh, consider, adjust (if appropriate) and apply or reject—as they would with any proffered benchmark. *See* SJRPFF–CO at pp. 803–04 (and case law and record citations therein). The Services note that considering the current rate structure as a benchmark (rather than as a mere attempt to preserve aspects of the *status quo*) is instructive because it allows for an identification of market value *by analogy*—through the examination of a comparable circumstance, rather than requiring the experts and the Judges to build a theoretical model from the ''ground up'' to represent the industry at issue, and without requiring the Judges to substitute their analysis and judgment as to why terms were included within the benchmarks. *See* 3/13/17 Tr. 691–2 (Katz) (''[My overall approach has been just ask the question [if] we take this as a benchmark . . . [i]s it reasonable to take the [2012] structure? . . . . [I]n trying to rely on the benchmark, I am trying to say, okay, well, the industry decided this, let me ask, is it working overall? . . . '' *[T]hat's what I would tend to do with any benchmark.* I am using it as a benchmark to avoid having to model things and build it from the ground up.'') (emphasis added).

The Services' experts opine that, for a number of reasons, the 2012 rate structure is not only *a* benchmark, but also that it is a *highly appropriate ben*chmark. First, they note that the 2012 rate structure embodies characteristics that the Judges have consistently identified as part and parcel of an appropriate benchmark. That is, the 2012 rate structure applies to: (a) the same rights; (b) the same uses; and (c) the same types of market participants. *See* 3/15/17 Tr. 1082–83 (Leonard); 3/13/17 Tr. 551, 566–7 (Katz).

Additionally, because the 2012 rate structure was the product of a settlement between and among market participants, the Services maintain that it reflects market forces, including an implicit consensus as to the effects of the structure on piracy and potential substitution across platforms. *See* 3/13/17 Tr. 580, 722 (Katz). More broadly, they argue that because the 2012 rate structure was agreed to by market participants who had assumedly weighed the costs and benefits of their agreement, it therefore demonstrates the ''revealed preferences'' of these economic actors. *See* 3/15/17 Tr. 1095 (Leonard); *see also* Leonard AWDT ¶ 74 (direct license agreements that track the regulatory rate structure are further evidence of a ''revealed preference'' for that structure).

Another Service expert notes that—because the Services have different tiers of listeners paying at different levels—their economic incentives are aligned with Copyright Owners—to avoid substitution of their higher priced services by their lower priced services (*i.e.,* to avoid opportunity costs). *Thus, the incentives that existed when the 2012 rate structure was first implemented remain in effect. See* 3/21/17 Tr. 2192 (Hubbard) (testifying that there continues to be a ''substantial heterogeneity on the consume side of the market.'').[251] Finally, the Services assert that the 2012 benchmark is relevant and helpful because, although it was entered into five years ago, it is nonetheless a relatively recent agreement, covering the current rate period and serving as a template for current agreements. *See* Katz WDT ¶¶ 6, 71; 3/13/17 Tr. 608–09 (Katz); Leonard AWDT ¶ 47 *et seq.* (noting that ''existing agreements'' regularly track the section 115 provisions); 3/15/17 Tr. 1082 (Leonard). As noted by Amazon's Head of Content Acquisition, Mr. Mirchandani, the 2012 rate structure has been demonstrated to be ''workable,'' even if ''imperfect.'' Mirchandani WDT ¶ 7.

The Services' experts further emphasize that the structure of current rates satisfactorily reflects the economic *market* conditions in which the mechanical license for interactive streaming is used. *See* 4/13/17 Tr. 5943 (Hubbard) (acknowledging a ''love'' of competitive markets, and recognizing that there are supply and demand considerations in this market that require the more flexible pricing structure generally provided in the current regulations). (I understand Professor Hubbard's reference to the particularities of ''this market'' to relate to the quasi-public good nature of the copies of musical works/sound recordings, as discussed in this Dissent, *supra.*)

The Services' experts candidly acknowledge that the rate structure they advocate is not necessarily the ''best'' approach to pricing in this market. *See* 4/7/17 Tr. 5574–6 (Marx); *see also* Mirchandani WDT, *supra.* Rather, the Services' link the fact that the marginal physical cost of streaming is zero to the need for a flexible rate structure such as now exists. Professor Hubbard links the zero marginal physical cost characteristic to the setting of royalty rates by noting that, because ''[t]he marginal production cost at issue here is—is zero. . . . it's not clear why it's not better to bring new customers into the market on which royalties would be paid and, of course, zero marginal cost incurred.'' 4/13/17 Tr. 5917–18 (Hubbard). *See also* Marx WDT ¶ 97 (''Setting the price of marginal downstream listening at its marginal cost of zero induces more music consumption and variety than per-song or per-album pricing.''). I understand this testimony to be consistent with the economic point, discussed *supra,* that, in the ''second-best world'' created by the characteristics of this market, no one can claim that any given rate structure is the ''best.''

Professor Katz notes that the existing rate structure captures important specific aspects of the economics of the interactive streaming market, accounting for: (1) the variable WTP among listeners; and (2) the corollary

[250] *Except when they do not. As noted supra,* the Services seek the elimination of the ''Mechanical Floor,'' a significant departure from the existing structure. I discuss that issue elsewhere in this Dissent.

[251] Professor Hubbard further notes that he identified no empirical evidence in the record of any opportunity costs incurred by Copyright Owners as a consequence of the extant rate structure, and that the survey results obtained by the Klein Survey support his claim that substitution/cannibalization is *not* a material economic factor. 4/13/17 Tr. 5918 (Hubbard). This issue is discussed in greater detail *infra.*

variable demand for streaming services. *See* 313/17 Tr. 586–87 (Katz); *see also* Marx WRT ¶ 239 *et seq.;* 4/7/17 Tr. 5568 (Marx) (noting that the present structure serves differentiated products offered to customer segments with a variety of preferences and WTP). In more formal economic terms, Professor Katz notes that the present structure enhances variable pricing that allows streaming services ''to work[][their]way down the demand curve,'' *i.e.,* to engage in price discrimination that expands the market, providing increased revenue to the Copyright Owners as well as the Services. 3/13/17 Tr. 701 (Katz).[252] I understand this testimony to be consistent with the economic point, made *supra,* that a price discriminatory rate structure is appropriate in markets with zero marginal physical cost, varying WTP and the absence of arbitrage.

Professor Hubbard attempts to capture the interrelationship between the economics of this market and the existing rate structure as follows:

> [F]rom an economic perspective, you can think of this market and this industry as being composed of different customer segments by tastes and preferences and willingness to pay. And so no rate structure can really work without understanding that, and no business model can really work without understanding that.
>
> [I]n terms of rate structures, the Phonorecords II framework from the previous proceeding does offer a benchmark to start because it provides for differences in distinct product categories in terms of music service offerings, pricing possibilities, and so on. And it has encouraged a very diverse digital music offering set from actual competitors.

3/21/17 Tr. 2175–76 (Hubbard).[253] Moreover, Professor Hubbard perceives a link between the existing rate structure and the ''growth in the number of consumers, number of streams, entry, the number of companies providing the streaming services, and the identity of the companies providing those services . . . .'' 4/13/17 Tr. 5978 (Hubbard); *see also* Hubbard WDT ¶ 4.7 ([REDACTED]).[254] *See also* 3/15/17 Tr. 1176 (Leonard) (noting that notwithstanding the changes and growth in the streaming marketplace over the current rate period, the underlying economic structure of the marketplace—that made a percent-of-revenue based royalty appropriate—has not changed).

The Services' experts further assert that the multiple pricing structures necessary to satisfy the WTP and the differentiated quality preferences of downstream listeners relate directly to the upstream rate structure to be established in this proceeding. For example, Professor Marx opines that the appropriate *upstream* rate structure is derived from the characteristics of downstream demand. 3/20/17 Tr. 1967 (Marx) (agreeing that the rate structure upstream should be derived from the need to exploit the willingness to pay of various users downstream via a percentage of revenue because downstream listeners have varying willingness to pay that should be exploited for the mutual benefit of copyright licensees and licensors). Professor Marx further acknowledged that this upstream:downstream consonance in rate structures represents an application of the concept of ''derived demand,'' whereby the demand upstream for inputs is dependent upon the demand for the final product downstream. *Id.* Moreover, Dr. Leonard notes that ''the downstream company is going to have a lot more information about . . . the business, about what makes sense,'' 4/6/17 Tr. 5238 (Leonard).

The Services also note that the existing rate structure has produced generally positive practical consequences in the marketplace. Their joint accounting expert, Professor Mark Zmijewski, testified that the decrease in publishing royalties from the sale of product under Subpart A since 2014 has been offset by an increase in music publisher royalties (mechanical + performance royalties) over the same period. *Expert Report of Mark E. Zmijewski February 15, 2017* ¶¶ 38, 40 (Zmijewski WRT); 4/12/17 Tr. 5783 (Zmijewski); *see also* 4/13/17 Tr. 5897 (Hubbard) (''the evidence that I reviewed suggests that the copyright holders have actually benefitted from this structure . . . .'').

More particularly, Professor Zmijewski testified that:

> 1. Total revenues reported by the NMPA for NMPA members from all royalty sources[255] [REDACTED] from approximately $ [REDACTED] in 2014 to $ [REDACTED] in 2015, a [REDACTED] in royalty revenue. *Id.* ¶ 41.
>
> 2. The [REDACTED] in (1) above includes an [REDACTED] in mechanical royalties from streaming from $ [REDACTED] in 2014 to $ [REDACTED] in 2015, a [REDACTED] in royalty revenue derived from the mechanical license. *Id.*
>
> 3. The [REDACTED] in (1) above includes an [REDACTED] in performance royalties from streaming from 4 [REDACTED] in 2014 to $ [REDACTED] in 2015, a [REDACTED]. *Id.*
>
> 4. Mechanical royalty revenue for the sale of downloads and physical phonorecords [REDACTED] in 2014 to $ [REDACTED] in 2015 (a [REDACTED] of $ [REDACTED]), while the combination of mechanical and performance royalty revenue royalty from streaming [REDACTED] from $ [REDACTED] in 2014 to $ [REDACTED] (an [REDACTED] of $ [REDACTED]). Thus, the [REDACTED] in royalty revenue from streaming outstripped the [REDACTED] from the sale of downloads and physical phonorecords by $ [REDACTED]. *Id.* ¶ 38.[256]

Moving to a comparison of revenue growth to streaming growth, Professor Hubbard dismisses as economically ''meaningless'' the argument that Copyright Owners have suffered *relative* economic injury under the current rate structure simply because the increase in their revenues from interactive streaming has been proportionately less than the growth in the number of interactive streams—leading mathematically—to a lower implicit or effective per stream royalty rate. 4/13/17 Tr. 5971–73 (Hubbard). That is, there is no evidence that, if the price of the services available to these low to zero WTP listeners had been increased, they would have paid the higher price, rather than declined to utilize a royalty-bearing interactive streaming service. In fact, the only survey evidence in the record (the Klein Survey, discussed *infra*) suggests that listeners to

[252] A Copyright Owner economic expert, Professor Rysman, acknowledges that—*under the current rate regime*—revenues may be increasing because of movements ''down the demand curve'' (*i.e.,* changes in quantity demanded in response to lower prices), rather than because of—or in addition to—an outward shift of the demand curve (*i.e.,* an increase in demand at every price). 4/3/17 Tr. 4373–74 (Rysman).

[253] Professor Hubbard's point that the variety of business models in the industry is a consequence of the various customer characteristics is noteworthy as a distinguishing counterpoint to the simple cliché that the Judges should be ''business model neutral.'' 3/21/17 Tr. 2175–76 (Hubbard).

[254] The Copyright Owners sought to rebut Professor Hubbard's argument by confronting him with the offerings of Tidal, a streaming service that does not compete by offering a low-cost service. Eisenach WDT ¶¶ 49–50. However, Tidal's offering of a higher priced subscription service that provides enhanced features such as hi-fidelity sound quality actually proves the point that Professor Hubbard and the other Service economists are making: There is a segmentation of demand across product characteristic and WTP that permits differential pricing in this industry.

[255] All royalty sources include mechanical royalties from physical phonorecords, digital downloads and streaming; performance royalties from streaming and non-streaming; and synchronization. Zmijewski WRT ¶ 41.

[256] By contrast, looking only at mechanical royalty revenue, for the sale of digital downloads and physical phonorecords mechanical royalty revenue [REDACTED] from $ [REDACTED] in 2014 to $ [REDACTED] (as noted in (4) above, whereas mechanical royalty from streaming [REDACTED] from $ [REDACTED] in 2014 to $ [REDACTED] in 2015. Thus, the $ [REDACTED] in mechanical royalty revenue from streaming [REDACTED] in mechanical royalty revenue from the sale of digital and physical phonorecords. This comparison is the metric from Professor Zmijewski's analysis that *Copyright Owners* assert is most relevant.

streaming services have a highly elastic demand, *i.e.,* they are highly sensitive to price increases. I understand Professor Hubbard's point to be highlighting the distinction, also discussed in the economics overview, *supra,* between an ''increase in demand'' and an ''increase in quantity demanded.''

On the *licensee* (interactive streaming service) side of the ledger, Professor Katz identifies the entry of new interactive streaming services (including Pandora) and new investment in existing interactive streaming services during the present rate period as evidence that the present rate structure is ''working.'' 3/13/17 Tr. 667 (Katz). In fact, he notes the *ubiquity* of percentage-of-revenue based royalty structures in the music industry, indicating (as a matter of revealed preference) the *practicality* of such a revenue-based royalty system. *See* 3/13/17 Tr. 766–67 (Katz); *see also* 4/5/17 Tr. 5166–67 (Leonard) (''[I]n the area of intellectual property licensing . . . percentage-of-revenue is not exactly surprising. In fact, I would say it is probably the most common approach that you see as a general matter. . . . [N]arrowing into the area we're talking about here of interactive streaming, it is pretty common here, too. . . .'').

In sum, given ''how the industry has performed'' under the current rate structure, the Services conclude that it is therefore appropriate to continue that basic structure going forward. 3/13/17 Tr. 565 (Katz).

The Services' economic experts do not ignore the fact that there may be revenue attribution problems when interactive streaming is combined with other products or services. They acknowledge that, even absent any wrongful intent with regard to the identification and measurement of revenue, attribution of revenue across product/service lines of various services can be difficult and imprecise. *See, e.g.,* 4/5/17 Tr. 5000 (Katz) (the problem of measuring revenue is ''certainly a factor that goes into thinking about reasonableness.'').[257]

However, Professor Katz testified that the existing rate structure agreed to by the parties accommodates these bundling, deferral and displacement issues via the use of a second rate prong that would be triggered if the royalty revenue resulting from the headline rate of 10.5% of streaming revenue fell below the royalty revenue generated by that second prong. Katz WDT ¶¶ 82–83; 3/13/17 Tr. 670 (Katz). Moreover, Professor Katz concluded that, because the marketplace appears to be functioning (in the sense that publishers are earning profits and new and existing interactive streaming services continue to operate despite accounting losses), these revenue-measurement issues are being adequately handled by the alternative rate prong, even if an altered second prong might work better. *Id.* at 738; 4/5/17 Tr. 5055–57 (Katz) (also noting that ''ecosystem'' entities in the mold of Amazon, Apple and Google, such as Yahoo, were in the marketplace when the existing rate structure was formulated). In similar fashion, Dr. Leonard opined that the 2012 rate structure created a number of ''buckets'' to deal with problems of this sort. 3/15/17 Tr. 1227–28 (Leonard).

More broadly, the Services' position regarding the use of the two prongs and their alternate rates to ameliorate the revenue-measurement problems is summed up by Professor Katz as follows:

> [T]he primary reason [for the two rate prongs] . . . is because of the measurement issues that can come up when having royalties based on a . . . percentage of revenues because there can be issues about how to appropriately assign revenues to a service. And so I think the minim[a] can play an important role when those—you know, when those measurement problems are severe, you can turn to the minimum instead. . . . [W]hat I have in mind, right, is that what would happen if you could imagine an entrepreneur coming along and saying we want to have a service and have some incredibly low price and not a very good monetization model, where a copyright owner would say—in an effectively competitive market, would say, wait a minute, I don't want to license to you on those terms. It's—I just think the possibility of getting a return is so low, I'm not going to do it, even though you, as an entrepreneur, are willing to try this. I as the copyright owner want some sort of, you know, return on it. And that's what the minimum also helps to do.

3/13/17 Tr. 599 (Katz.); *see also* 3/20/17 Tr. 1900–01 (Marx) (minima protect against revenue measurement problems); 4/7/17 Tr. 5584 (Marx) (noting that the statutory minima play ''two roles''—*protecting the Copyright Owners* from ''revenue mismeasurement'' by creating the ''greater of'' prong, '' but incorporating the per subscriber rate prong in the ''lesser of'' component *to protect the services* from ''manipulation of the sound recording royalties'' on which the TCC prong is calculated).

Another particular issue raised by the existing structure relates to the significant percentage of listeners to interactive streaming services that are ''free'' to the user. For example, as of August 2016, Spotify had [REDACTED] million average monthly users on its ad-supported service, compared with [REDACTED] million subscribers to its subscription service. Marx WDT ¶ 49 n.62 & Fig. 7; Hubbard WDT ¶ 3.14 and Ex. 4 ([REDACTED]. Accordingly, the treatment of such services in the rate structure is of particular importance. The majority of the listeners to the ad-supported format use Spotify's ad-supported service, although there are other such services available in the market, including SoundCloud and Deezer. *See* COPFF ¶ 341 (and record citations therein). (The arguments regarding the appropriate rate structure pertaining to ''free to the user'' services overlaps to an extent with the argument regarding ad-supported services, and I consider them jointly.)

The Services assert that they offer ad-supported or other free-to-the-user interactive streaming tiers to meet the demand of a large cohort of the listening population that does not have a positive WTP for streamed music. [REDACTED]. 3/21/17 Tr. 2179–83 (Hubbard); *see also* Marx WDT ¶¶ 53–54; Katz WDT ¶ 86. [REDACTED]. 4/13/17 Tr. 5906 (Hubbard) (''[REDACTED]'') *see also* 4/5/17 Tr. 5231 (Leonard) (''the funneling is itself a mechanism to separate out the people who really value music and want to just be able to listen to what they want to listen to, versus people who . . . are not willing to pay that amount of money . . . .''). In this regard, Spotify most aggressively markets itself as an ''up-seller''—providing its ad-supported service as a funnel to convert low WTP listeners into subscribers. Spotify's strategy, as explained by its in-house economist, is as follows:

> One of Spotify's key beliefs in its commercial strategy is that moving someone from piracy to a legal music service needs to be frictionless—otherwise, they won't come. Often a Spotify user's journey begins in our free-to-users ad-supported tier, and upgrades to a paid (or premium) subscription as he or she becomes more familiar with the enhanced paid-only features through trial promotions and/or marketing efforts. . . . This presents a ''you help me today and I'll help you tomorrow'' licensing proposition: as rightsholders allow Spotify to use their content, Spotify in turn helps rightsholders, by first taking users from free options that pay little to no royalties—such as piracy, or even AM/FM radio—to an ad-supported service that generates higher royalties, and then further taking these users to a paid service . . . .

*Written Direct Testimony of Will Page (On behalf of Spotify USA Inc.)* (Page WDT) ¶¶ 13–14.

Mr. Page notes the success of Spotify in growing the overall ''royalty pie'' in its home country of Sweden, where

[257] This Dissent considers the specific deferral and displacement arguments in more detail *infra.*

''[w]hat wasn't understood [in 2009], but is appreciated now, is that the vast majority of the adult population in *all* key markets spends *zero* on music. Spotify's core commercial proposition was to grow the business by growing the average revenue per person across the entire population, not by holding onto a shrinking minority of people buying albums or PDDs.'' *Id.* ¶ 24.

To avoid substitution (*i.e.,* cannibalization) that would reduce revenues to the services and the rightsholders alike, the services differentiate such ''funneling'' products by intentionally structuring them as inferior in quality compared to subscription tiers, for example by interspersing songs with ads (as in the Spotify ''free'' tier) and by offering a more limited repertoire of songs (as with Amazon Prime Music). As Professor Hubbard explains, ''free-to-the listener'' tiers must be inferior in some manner of quality in order to sort out listeners who have a WTP sufficient to pay for the higher-priced (*i.e.,* subscription) tier. He elucidates this point by analogizing to the discriminatory pricing of airline seating, whereby different classes of seating combine varying amenity packages with higher prices (*i.e.,* first class, business class and coach). Hubbard WDT ¶ 3.15.[258]

The use of an ad-supported service as a ''freemium'' model thus serves a dual purpose: First, it is an efficient means of marketing—segregating listeners according to WTP—allowing them to ''experience'' interactive streaming, *while, second, still providing royalties to Copyright Owners.* (If Spotify substituted self-advertising in other media as a marketing tool instead of offering an ad supported service, Copyright Owners would realize zero royalties until such self-advertising resulted in new subscribers.)[259]

With regard to the tangible economic benefits of such downstream products to the upstream Copyright Owners, Professor Marx notes that an ad-supported service is in the nature of a multi-party ''platform,'' creating an intersection among streaming services, listeners and advertisers. 3/21/17 Tr. 2013 (Marx). This is why she emphasizes, as did Mr. Page, *supra,* that ''Spotify's ad-supported service is monetizing . . . low-willingness-to-pay listeners better than [REDACTED], terrestrial radio, and, of course, piracy.'' 4/7/17 Tr. 5503 (Marx); *see also* Marx WRT at 14, Fig. 7 (comparing ''musical works royalties per user-hour across these alternatives).

Professor Marx also noted that it is inappropriate to consider the royalty rates paid by higher-priced interactive streaming services, such as Tidal, as evidence supporting a finding that ad-supported or other ''free to the listener'' services pay too little in royalties. She notes that the ad-supported and other ''free to the listener'' tiers represent the exploitation of the low WTP segment of the demand curve, whereas other services seek to exploit the *higher end* of the demand curve. For example, and as noted *supra,* Tidal offers a $20 per month subscription tier that can generate higher royalties, but does so by offering a differentiated product of higher quality via a premium high-fidelity. 3/21/17 Tr. 5601–02 (Marx).

**4. Copyright Owners' Argument against the 2012 Percent-of-Revenue Structure (with Minima) and Judicial Analysis of that Argument**

**a. The Allegedly Limited Evidentiary Value of Settlement Rates**

Copyright Owners criticize the relevancy of the 2012 settlement-based rate structure. First, they note that, as terms in a settlement, the elements of the rate structure do not reflect the structure the market would set, but rather reflect only the parties' own prediction of how the Judges would rule in the absence of a settlement. *See* 4/4/17 Tr. 4591 (Eisenach).

Second, Copyright Owners dismiss any relevancy in the fact that they agreed in the 2012 settlement to maintain virtually unchanged the Subpart B rate structure and rates set forth in the 2008 settlement. They claim that this essential *status quo* was maintained because there had been only a two-year window between the *Phonorecords I* settlement and the commencement of proceedings in *Phonorecords II,* and that no meaningful market changes occurred in that short time period. However, the Services dispute the substantive assertion that there was no significant market development by the time of *Phonorecords II. Written Rebuttal Statement of Zahavah Levine (On behalf of Google, Inc.)* ¶¶ 5–6 (Levine WRT); 3/8/17 Tr. 171–172; 270–272 (Levine). Numerous services, including the more recent large new entrants, had already entered the market, with some realizing significant subscriber numbers. *Id.* at 155–157 (Levine). Ms. Levine further testified that the Subpart B rates could not reasonably be construed as ''experimental'' during the *Phonorecords II* negotiations, and by the time of the *Phonorecords II* settlement, other significant market changes had occurred in the music delivery market. *Id.* ¶ 5. For example, she notes that Rhapsody had already been in the market for approximately ten years and had approximately one million paying listeners. *Id.* ¶¶ 5–6.

Third, Copyright Owners assert that [REDACTED]. *Rebuttal Witness Statement of David M. Israelite* ¶ 28 (Israelite WRT); 3/29/17 Tr. 3649–3652 (Israelite). However, the Services respond by noting that there is no evidence to support Mr. Israelite's testimony regarding the [REDACTED]. And, notwithstanding his testimony regarding [REDACTED], the Services note that the NMPA incurred the expense of a year-long negotiation with the Services to seek higher rates, create new service categories in Subpart C, and changes to the TCC calculations. *Id.* at 159, 161–164; 3/29/17 Tr. 3856 (Israelite).

Fourth, Copyright Owners assert, assuming *arguendo* that the current rate structure can be used for benchmarking purposes, that the Services have not presented competent evidence or testimony as to the intentions of the settling parties who had negotiated the

[258] Professor Hubbard's example parallels the insight of the 19th century French economist, Jules Dupuit, one of the first economists to explain the economics of price discrimination. Dupuit examined the pricing of several classes of seating on railway carriages. As he noted: ''[A] good many . . . travelers in third class, travel[ ] without a roof over the carriage, on poorly upholstered seats . . . . It would cost very little . . . to put some meters of leather and kilos of horse-hair [on the seats], and it is beyond greed to withhold them. It is not because of the several thousand francs which they would have to spend to cover the third class wagons or to upholster the benches that a particular railway has uncovered carriages and wooden benches; it would happily sacrifice this for the sake of its popularity. Its goal is to stop the traveler who can pay for the second class trip from going third class. It hurts the poor not because it wants them to personally suffer, but to scare the rich. The comfort in third class is deliberately reduced to dissuade travelers who are ready to pay for higher levels of comfort from traveling at the cheaper fares.'' Jules Dupuit, *De l.infuence des péages sur l'utilité des voies de communication,* Annales des Ponts et Chaussées, 17, mémoires et documents 207 (1849), *quoted in* T. Randolph Beard & Robert B. Ekelund, Jr., *Quality Choice and Price Discrimination: A Note on Dupuit's Conjecture,* 57 So. Econ. J. 1155, 1156–57 (1991).

[259] The interactive streaming of music is an ''experiential'' good. *See Byun, supra,* at 23 (''Music is a specific type of good, known as an experiential good, meaning that it must be experienced or sampled before the customer can assess . . . quality . . . and . . . utility.'') Thus, the provision of a monetarily ''free-to-the user'' service is a reasonable marketing tool, and the Judges are loath to second-guess the business model incorporating that marketing approach, especially after it has proven successful while still providing royalties to rights owners. *See* Page WDT ¶ 27 (Spotify's freemium model monetizes through subscriptions more successfully than the sale of downloads and CDs, as well as terrestrial radio and, of course, piracy). Also, the Judges do not find it relevant that many other interactive streaming services have not utilized an ad-supported service, absent record evidence as to why they have ceded that significant market (and marketing) niche principally to Spotify.

2012 settlement, or, for that matter, the 2008 settlement that preceded it. Specifically, Copyright Owners claim that the witnesses who were called by the Services to testify in this regard did not negotiate directly with the Copyright Owners in connection with these settlements. 3/29/17 Tr. 3621–22 (Israelite). More particularly, the two Services' witnesses who provided testimony in this regard, Adam Parness and Zahavah Levine, acknowledged they had no *direct* involvement in the *Phonorecords I* negotiations, and Ms. Levine did not engage in direct negotiations with regard to the *Phonorecords II* settlement either. 3/9/17 Tr. 339–40 (Parness); 3/29/17 Tr. 3885–86 (Israelite); *see also* Israelite WRT ¶ 14 (indicating that Ms. Levine had left Real Networks in 2006, before her former subordinate was negotiating the 2008 settlement).

However, the evidence indicates that Ms. Levine and Mr. Parness were involved in the contemporaneous internal discussions of negotiation strategy on behalf of the Services, which makes their testimony relevant as to the intentions of the Services involved in those earlier negotiations. More particularly, Ms. Levine was employed by Google/You Tube when the 2012 settlement was negotiated and finalized. At that time, Google was a member of DiMA, the trade association representing the interests of actual and potential interactive streaming services. *See Phonorecords II, DiMA Petition to Participate.* Thus, Ms. Levine was competent to give testimony as to the parties' positions in the negotiations.

Mr. Parness testified, at the time of the *Phonorecords I* settlement, he was Director of Musical Licensing for RealNetworks, Inc., an interactive streaming service and a member of DiMA, its bargaining representative. In that capacity, Mr. Parness was ''actively involved'' on behalf of Real Networks. *Written Direct Testimony of Adam Parness (on behalf of Pandora Media, Inc.)* ¶ 5 (Parness WDT). Mr. Parness understood that the important aspects of the *Phonorecords I* negotiations and settlement were: (1) an agreement that noninteractive services did not need a mechanical license; (2) the interactive mechanical license would be calculated on an ''All-In'' basis; (3) the rate would be structured as a percent-on-revenue with certain minima; and the headline rate would be 10.5%. Parness WDT ¶ 7. He noted that the rate minima were included at the behest of Copyright Owners, who were concerned that a purely revenue-based rate might result in too little revenue. *Id.* ¶ 8. Mr. Parness further testified, with regard to the 2012 negotiations, that he *directly* negotiated with Mr. Israelite and the general counsel for the NMPA, negotiations that led to the parties' agreement essentially to maintain the Subpart B structure and to create what became the new Subpart C rate structure. *Id.* at 11; *see also* 3/9/17 Tr. 325–27 (Parness).

Ms. Levine testified that in the *Phonorecords II* negotiations, Copyright Owners sought an increase in the Subpart B rates, the services refused, and Copyright Owners ultimately withdrew that demand. Levine WRT ¶ 2. The implication from this testimony is that the stability of the rate structure is not indicative of the absence of negotiations, but, at least according to Ms. Levine, that rate structure stability was a by-product of the negotiating process.

**b. The Settlement Rates are Anachronistic**

On behalf of Copyright Owners, Mr. Israelite described their willingness to continue the 2008 rate structure through 2017 (ten years in total) as reflective of their understanding that the interactive streaming market was still not ''mature,'' Israelite WDT ¶ 108; WRT ¶ 26, and thus the ten year rate structure remained ''experimental.'' Israelite WDT ¶ ¶ 81, 103; Israelite WRT ¶ ¶ 4, 19, 26, 32. This issue is discussed in more detail *infra.*[260]

More particularly, Copyright Owners maintain that the current rate structure was ''experimental'' because there had been no data to evaluate the interactive streaming business, and Copyright Owners lacked knowledge as to the future development of the interactive market. Israelite WDT ¶¶ 33, 81, 95); Israelite WRT ¶¶ 4, 17, 18, 19, 29; 3/29/17 Tr. 3631–32, 3754, 3764–65 (Israelite); *see also* COPFF ¶ 421 (and record citations therein).

Whether experimental or otherwise, [REDACTED]. *Id.* at 3636–38.

In response, the Services assert that there is no record evidence, beyond Mr. Israelite's testimony, that the existing rate structure was, or remains, experimental. They further note (as referenced *supra*) that by 2012, when this rate structure was renewed, consumer adoption of streaming was obvious, contrary to Copyright Owners' allegations. Levine WRT ¶ 5. The Services also assert that numerous services, including those backed by large companies, such as Yahoo and Microsoft, had already entered the market, and some of those services had achieved significant subscriber numbers. 3/8/17 Tr. 155:14–157:12 (Levine); *see also* Parness WDT ¶ 12.

**c. Alleged Displacement and Deferral of Revenue**

Copyright Owners criticize the 2012 rate structure because its reliance on a revenue-based structure creates problems regarding the measurement of revenue. Specifically, Copyright Owners allege that services can *displace* revenue properly attributable to streaming and allocate it to other products within the owners' broader economic ''ecosystem.'' Also, they allege that services can and do *defer* revenue from the present into the future, foregoing present profits in order to grow their customer base to achieve a market share that allows for long-term profits.[261] *See* Rysman WDT ¶ 13.

The problems associated with revenue measurement and attribution arise in various contexts. First, the Services may focus on *long-term* profit or revenue maximization, thereby possibly *deferring* shorter-term profits through temporarily lower downstream pricing (*i.e.,* revenue deferral) in a manner that suppresses revenue over that shorter-term. Second, the services may use music as a ''loss leader,'' *displacing* streaming revenue and encouraging consumers to enter into the so-called economic ''ecosystem'' of the streaming services, especially the multi-product/service firms in this proceeding—Amazon, Apple and Google—within which consumers can be exposed to other goods and services available for purchase. Third, the interactive streaming services may *obscure* royalty-based streaming revenue by offering product *bundles* that include their music services with other goods and services, rendering it difficult to parse out the bundled revenue as between the royalty-bearing revenue (from the interactive service) and the revenue attributable to the other items in the bundle.

**i. Deferral**

With regard to revenue *deferral,* Copyright Owners argue that the services' focus on future growth, not

[260] In an attempt to dig deeper into why Copyright Owners agreed to particulars in the settlements regarding the TCC prong, the Judges asked Dr. Eisenach if Copyright Owners had provided him with information regarding the 2012 settlement. He responded by stating that ''[w]hen I've asked the question, I've found people chuckle . . . when I ask the question, people say: 'Nobody really knows.' . . . . Someone may know, but that's what I've been told.'' 4/4/17 Tr. 4611 (Eisenach). I am perplexed by the response provided to Dr. Eisenach, because the history of the present rates would seem to be of great relevance, ascertainable and not subject to being laughed off when a party's own expert seeks such information.

[261] This strategy is referred to as ''scaling,'' and is discussed in more detail *infra.*

current revenues. *See* [REDACTED] ([REDACTED]). By way of example, Copyright Owners highlight a particular aspect of [REDACTED] business model: [REDACTED]. *Id.* at 2168–69 ([REDACTED]). The economic upshot of such a focus on the long-run rather than on present revenues, according to Copyright Owners, has caused revenues to grow annually by *only* 31% from 2013 to 2014, and by *only* 34% from 2014 to 2015, even as the number of streams over these two periods has grown by 63% and 101% respectively. Ghose WDT ¶ 74.

The Services respond by noting that Copyright Owners did not conduct an empirical analysis to confirm the extent to which to which interactive streaming services actually engage in revenue deferral, and that their expert was therefore compelled to qualify his conclusions by conceding only that such revenue deferral ''may'' occur. *See* 4/3/17 Tr. 4344–43, 4347, 4349 (Rysman). Additionally, the Services assert that the primary industry pricing model—$9.99 per month for unlimited access—has existed since the early 2000's, belying Copyright Owners' assertion that there has been a change in pricing in the current rate period intended to build market share. *See* Levine WRT ¶ 6 (describing how Rhapsody ''pioneered'' the subscription on-demand model in the early 2000's and how the $9.99 model was adopted by, *e.g.,* MOG, Rdio and Rara).

[REDACTED]

The Services also argue that Copyright Owners misunderstand the services' emphasis on [REDACTED]. However, as noted *supra,* the Services do acknowledge that they focus broadly on [REDACTED]. *Id.* at 2082, 2141 ([REDACTED]).

The Services also disagree with Copyright Owners' assertion that [REDACTED], 4/7/2017 Tr. 5498 (Marx); 3/21/17 Tr. 2169 (McCarthy); and [REDACTED]. 4/6/2017 Tr. 5327 (Vogel). Thus, the business model, they argue, is reflective of the fundamental structure of market demand, rather than evidence of revenue deferment.

I find that the record indicates that the services do seek to engage to some extent in revenue deferral in order to promote their long-term growth strategy. A long-term strategy that emphasizes scale over current revenue can be rational, especially when a critical input is a quasi-public good—because growth in market share and revenues is not matched by a commensurate increase in the cost of such inputs, whose marginal cost of production (*reproduction,* actually, because they are copies of sound recordings/musical works) is zero. This is the success-through-scalability discussed *infra. See generally* Haskel & Westlake, *supra,* at 65–66 (profitability through scaling is enhanced by the use of inputs with zero marginal costs).

It appears that the nature of the downstream interactive streaming market, and its reliance on scaling for success, results necessarily in a competition *for the market* rather than simply competition *in the market.* This is the form of dynamic competition known as Schumpeterian competition (named after the economist Joseph Schumpeter). Such competition emphasizes the importance of the dynamic creation of new markets and ''new demand curves,'' recognizing that short-term profit or revenue maximization may be inconsistent with rational competition *for* the market. That is, this form of competition recognizes that businesses and investors do not simply seek out commercial activities that will merely earn returns available elsewhere in the economy, but rather seek out longer-term supranormal profits, investing in businesses that appear able to satisfy consumer demand and capture large swaths of market share—a dynamic and enduring process that creates and ultimately destroys various business entities and markets in the process (which Schumpeter coined as ''creative destruction.'') *See* J. Sidak & D. Teese, *Dynamic Competition in Antitrust Law,* 5J. Comp. L. & Econ.5, 581 (2009). Indeed, Amazon's economic expert witness, Professor Hubbard, acknowledged that ''[t]he music industry exemplifies this process'' of Schumpeterian ''creative destruction.'' Hubbard WDT ¶ 2.1 & n. 1.

Of course, when royalties are paid as a percent of *current* revenue, the input supplier, *i.e.,* Copyright Owners in the present case, are likewise deferring some revenue to a later time period (and also assuming some risk as to the ultimate existence of that future revenue). One way the input supplier can avoid this impact is to refuse to accept a percent of revenue form of payment and move to a fixed per-unit input price. This is what Copyright Owners seek in this proceeding, subject to a bargaining room approach by which they could switch back to the old approach (or any other approach) through purely market-based negotiations, but free from the statutory standards of section 801(b)(1). However, another way in which the input supplier can mitigate the effect of such revenue deferrals is to establish a pricing structure that provides alternate rate prongs and floors, below which the royalty revenue cannot fall. This is precisely the bargain struck between Copyright Owners and services in 2008 and 2012, and that has been ongoing through the present day.

Are there even better ways to address this issue? Perhaps, but by the very nature of this adversarial proceeding, the Judges cannot identify the theoretically optimal manner by which the revenue deferral phenomenon should be addressed. Rather, the choices before the Judges are stark: the per-unit pricing proposals submitted by Copyright Owners and Apple, and the tiered rate structure now in existence and generally (but not uniformly) presented by the Services as the appropriate benchmark.[262] As discussed *infra,* I have identified the 2012 rate structure as the best benchmark *from among these proposals.* The revenue deferral phenomenon indicates the need for Copyright Owners to protect themselves, but it does not indicate that, on balance, the issue is better resolved by the unacceptable per unit pricing proposals submitted in this proceeding. Accordingly, I do not find the revenue deferral issue to be a sufficient basis to reject the 2012 benchmark in favor of Copyright Owners' or Apple's per-unit rate proposals.[263]

**ii. Displacement through Bundling**

Copyright Owners argue that services also *displace* revenue by engaging in ''cross-selling'' by which they sell access to musical works/sound recordings through the *bundling* of that

[262] As I note in this Dissent, there is no sufficient evidence to allow the Judges to mold their unique rate structure, and the majority has erred in its attempt to do so.

[263] Looked at from a different perspective, this issue pits the *music publishing business model* against the *interactive streaming business model.* Music publishers must maximize revenues (subject to any cost constraints) over *some* time horizon, and their argument in this proceeding indicates that they seek to maximize royalty revenue over the short-run, so that *current* songwriters receive royalties based on *current* revenue that is not deferred because of the interactive streaming services' long-term business model. *See* Rysman WDT ¶ 50. The music publishers could instead pay royalties to songwriters based (at least in part) on an index of several years of revenue to be consistent with the long-term business models of the interactive streaming entities. *See* Leonard WRT ¶ 60 (noting that advances from publishers to songwriters are examples of such a long-run ''smoothing'' of royalty revenues). Or, as Copyright Owners urge, the Judges could require the interactive streaming services to abandon the revenue-based royalty structure (with protective alternate prongs and floors) and to accept inefficient per-unit rates, thereby compromising their downstream businesses. In keeping with the Judges' long-standing position, I believe the Judges should remain *business model neutral,* and decline to favor one challenged business model over another. *Instead, I would adopt the 2012 rate structure that embodies a negotiated compromise by the parties that has adequately addressed this revenue deferral issue.*

access with other goods or services, allocating too much revenue to the non-music portion of the bundle, rather than attributing the correct amount to the music service and thus, to the revenue base. *Written Rebuttal Testimony of Christopher C. Barry, CPA, CFF (on behalf of Copyright Owners)* ¶ 7. Copyright Owners argue that the services *manipulate* revenue calculations in their favor, allegedly defining revenue in *opportunistic* ways. *See* Rysman WDT ¶ 44; Rysman WRT ¶ 15; Ghose WDT ¶¶ 62–81. They maintain that they cannot discern such manipulation and opportunism as it occurs, because the booking of revenue among lines of business is ''opaque to publishers''—especially in comparison to the identification of the number of consumers or the number of streams. Rysman WDT ¶ 43; Rysman WRT ¶ 15; Ghose WDT ¶¶ 80–81.

In response, the Services assert there is no evidentiary support for this overall and conclusory assertion. JSRPFF at p. 308. In connection with the assertion of displacement-through-bundling, both parties examine—essentially as an emblematic case study—Amazon's pricing of interactive music in a bundle with one of its products. That study is addressed below.

*Amazon Products and Pricing: A Case Study*

[REDACTED]

*Survey Results*

[REDACTED]. [264]

*Other Potential Displacements from Bundling*

With regard to other bundled offerings that Copyright Owners claim to improperly diminish revenue and hence the royalty base, the evidence is more descriptive than statistical. With regard to Google Play Music, Copyright Owners point to evidence suggesting that Google ''leverages its music business to drive revenue elsewhere within its enterprise.'' COPFF ¶ 482A *et seq.* (and record citations therein). Google, in response, argues that this argument is preposterous because ''Google's other products already reach literally hundreds of millions of people in the U.S. [and] [t]he idea that Google is intentionally driving down the price of Google Play Music in order to ''grow a base of customers'' who will then be more likely to use Search or Gmail or Google Maps simply strains credulity. . . . . The value proposition flows in the opposite direction.'' Levine WRT ¶¶ 8–9.

With regard to Pandora, Copyright Owners note that it has expanded beyond its ''pureplay'' origins by acquiring Ticketfly, a fan-to-fan live concert ticket exchange business. 3/9/17 Tr. 408–410 (Phillips). According to Copyright Owners, in the future, Pandora *may* generate revenue from this ancillary business—revenue that arguably should be included as ''service revenue'' in a revenue based rate structure. Rysman WRT ¶ 34. However, Pandora notes that Ticketfly is a small operation relative to Pandora's overall business and, as Copyright Owners acknowledge, any use by Pandora of resources it obtained through streaming music to benefit Ticketfly would be realized in the future, making such a link speculative at this time. Moreover, Pandora argues that, if and when Pandora may drive incremental attendance at concerts and other live events through Ticketfly, music publishers and songwriters would benefit directly from such attendance. *See* Herring WRT ¶ 34.

[REDACTED]. It has announced an offering of a subscription together with a subscription to *The New York Times, i.e.,* a separate entity offering a separate product. According to Copyright Owners, Rysman WRT ¶ 36. However, [REDACTED]. SJRPFF at p. 868.

Finally, with regard to Apple, Copyright Owners note that the various music and other services and products are available through Apple, including iTunes download purchases, Beats music service and, of course, Apple's ubiquitous non-music products. *See* COPFF ¶¶ 523–527. Although Copyright Owners do not identify any specific bundling or product-to-product displacement, they note more broadly that ''Apple's interactive streaming service can operate as a gateway into the iTunes ecosystem, which Apple uses to sell iPhones, apps, and other products.'' Kokakis WDT ¶ 60.

*Findings Regarding Displacement, Discounts and Bundling*

I find the parties' back-and-forth on these bundling, discounting and displacement issues (absent a separate analysis of any given bundle/discount, such as presented by Amazon with regard to the bundled $7.99 price for Echo for Prime members) to be indeterminate—and for good reason. As the Judges have found previously, all such bundling, and associated discounts, constitute forms of price discrimination, whereby a seller can increase total revenues for the bundle and through a discount beyond the revenue realized if each item was sold at its separate or undiscounted price. *See SDARS I Underpayment Ruling* at 18–19. The parties in the present proceeding do not so much dispute this point as they argue whether the bundles discounts and alleged displacements tend, on balance, to increase the revenue base (by adding new subscribers) or to decrease the revenue base (by reducing per subscriber revenue). I agree with Copyright Owners that the services *may* be using bundling and associated discounts in a manner that is inconsistent with short-run maximization of revenues, or even profits, but they may also be growing the revenue base.

*The import of this dispute in the present case is how the presence of bundling and discounting bears, initially, on the rate structure and, then, on the rates within that structure.* With regard to the rate structure, the rate prongs in the 2012 benchmark that the Services are urging the Judges to adopt deal with these revenue measurement and attribution issues by the use of a greater-of rate structure, whereby—if the revenue-based royalty is lower than the other prong (typically a per-subscriber, a TCC prong or the Mechanical Floor)—then one of the latter prongs becomes applicable. By contrast, Copyright Owners' proposal provides for a greater-of per unit/per-user royalty that does not contain any features pertaining to bundling. As between these two alternatives, I find that the 2012 rate structure is clearly more consonant with the marketplace reality of varying WTP, through the use of price discrimination through bundling and, indeed, has accommodated such bundling for a decade.

I acknowledge Copyright Owners' argument that the bundling they anticipated may well have been of a different nature (*e.g.,* bundling interactive streaming with cell phone or internet service) when they agreed to the bundle provisions in the 2012 settlement, and that they had not contemplated the myriad ways in which bundling would occur going forward, especially with the entry of large multi-product ''ecosystem'' firms such as Amazon, Apple and Google. However, what that possible difference between anticipated and actual bundling indicates to me is that, *hypothetically,* perhaps a different bundling structure, or different rates within the structure, might be more appropriate than the 2012 rate structure in this regard. But the Judges cannot deal in hypothetical rate structures and rates: Copyright Owners (and Apple) did not propose such an alternative structure; instead, so

[264] With regard to this topic, see the discussion of ''cannibalization,'' *infra.*

to speak, they threw out the baby with the bath water, *rejecting any price discriminatory rate structure* (and bundling is a form of price discrimination)—proposing instead to replace such a structure with a non-discriminatory rate that fails to address the varying WTP among listeners from which upstream demand by the interactive streaming services is derived.

In these proceedings, the Judges are bound by the parties' proposals, unless there are record facts that permit the Judges to mold a rate structure or rates that vary from the proposals.[265] Here, with regard to the impact of bundling and other price discriminatory elements of the rate structure, the choices are stark. Only the 2012 benchmark proposed by the Services addresses these issues, and in a manner that has existed in the market for a decade.[266]

**d. Cannibalization**

Copyright Owners assert that the Services' benchmarking approach fails to account for the ''cannibalization'' of digital download and physical sales, through listeners' substitution of interactive streaming for the purchase of digital downloads and physical products, mainly CDs. In support of this argument, Copyright Owners point to the contemporaneous increase in interactive streaming and the decrease in the sales of digital downloads and CDs. They note that the sale of digital albums and digital tracks decreased by 9.4% and 12.5%, respectively from 2013 to 2014, and by an additional 2.9% and 12.5%, respectively, from 2014 to 2015. *See* Israelite WDT ¶ 70; Ex. 2773 (2014 Nielsen Report), at 2; Ex. 2780 (2015 Nielsen Report), at 7, 8. Thus, they argue that the royalty structure (and rates) must account for this substitution effect through an increase in the royalties on interactive streaming. *See* COPFF ¶¶ 575–586 (and record citations therein).

The Services do not dispute these statistics. However, the Services argue that Copyright Owners have not presented any evidence that would support the claim that declining physical and download sales have been *caused* by increases in interactive streaming. Thus, in the absence of such evidence, the Services argue that Copyright Owners have merely assumed causation from correlation. *See* JSRPFF at p. 380 (and record citations therein).

In fact, they point to the testimony of NMPA's own witness, Bart Herbison, Executive Director of Copyright Owner participant NSAI. Mr. Herbison testified that he did not ''blam[e] the loss of songwriters on streaming,'' acknowledging that piracy and disaggregation of the album were major problems for songwriters prior to the popularity of streaming, and therefore, overall, he was ''not ascribing any large percentage of [lower mechanical royalties] to streaming.'' 3/23/17 Tr. 2940–41, 2945, 2955–56 (Herbison).

Moreover, not only do the Services note the absence of proof that these changes were caused by interactive streaming, they note that the changes can just as easily be attributed to changing ''consumer preferences,'' for which the interactive streaming services should not be penalized. *See* 3/21/17 Tr. 2227–28 (Hubbard) (such changes do not reflect cannibalization, but rather how the industry has evolved to satisfy ''contemporary consumers' preferences'' and to ''respond to consumer demand.'').

I find that there is no sufficient evidence to indicate that interactive streaming has caused the decline of the sale of physical and digital sound recordings. Moreover, even assuming *arguendo* any sales of digital downloads and physical product was caused by the listeners' preference for interactive streaming, the effect of such a phenomenon on songwriter royalties is unclear. Record companies, as licensees, pay royalties to music publishers, under subpart A, for the musical works embodied by record companies in digital downloads and physical product. Assuming a portion of that royalty revenue is lost (''cannibalized'') by interactive streaming, the services that utilize the musical works in those streams pay both a mechanical royalty and a performance royalty in exchange for the licenses to use the musical works. There is insufficient evidence in the record to conclude that, on balance, there is a net substitution effect that results in lower royalties paid for musical works.

Further, I agree with the Services that Copyright Owners' attempt to compare sales of downloads and physical product (which generate mechanical royalties under subpart A) with revenues from interactive streaming (that generate mechanical royalties under subparts B and C, and performance royalties) is inconsistent with Copyright Owners' (persuasive) argument, discussed *infra,* that there is no sufficient evidence to correlate listening across purchases and streaming services. The Services correctly note that the sale of a download or a CD (or a vinyl record) allows the purchaser to ''access'' that purchase an indefinite number of times, whereas access through a streaming service likewise allows for listening (to various songs) for an indeterminate number of times. In this regard, Copyright Owners' proposed per-unit royalty rate for streaming is simply not consistent with pricing per unit sold under subpart B, because the items purchased are themselves inconsistent in nature—as Copyright Owners (again, persuasively) argue in opposition to the use of commercial and academic conversion ratios to correlate the number of times a consumer listens to a song in the purchased product and streaming spheres.

**e. The ''Shadow'' of the Statutory License**

Copyright Owners assert that any benchmark, including the Services' proffered benchmarks, based on rates set for a compulsory license, are inherently suspect, because they are distorted by the so-called ''shadow'' of the statutory license. This is a recurring criticism. *See, e.g., Web IV* 81 FR at 26329–31.

More particularly, Copyright Owners argue: ''The royalty rate contained in virtually any agreement made by a music publisher or songwriter with a license for rights subject to the compulsory license will be depressed by the availability of the compulsory license.'' COPFF ¶ 708 (and record citations therein). In summary, this alleged shadow purportedly diminishes the value of a rate that was formed by private actors who negotiated while understanding that either party could refuse to consummate a contract and instead participate in a proceeding before the Judges to establish a rate. Thus, neither side can utilize any bargaining power to threaten to actually ''walk away'' from negotiations and refuse to enter into a license. In that sense, therefore, any bargain they struck would be subject to the so-called ''shadow'' of the regulatory proceeding.

The argument that the shadow taints the use of statutory rates, and direct agreements otherwise subject to the statutory license is undercut, however, by section 115 of the Copyright Act,

[265] As noted *supra,* the Judges may also find that the existing rate structure and rates are appropriate, if the benchmarks proffered by all the parties are insufficient. *See Music Choice, supra.* Thus, the 2012 rate structure would have been an appropriate structure for the forthcoming rate period even if it had not been affirmatively advocated as a benchmark by the Services.

[266] I note an important difference between the bundling issue in the SDARS context and that issue here. For the SDARS, the issue was how to measure revenue where only a pure revenue-based rate structure exists, and the Judges noted the difficulty in assigning value to different elements of the bundle. Here, the 2012 benchmark (the parties' agreement) addresses this indeterminacy by adopting alternative royalty prongs, which, as noted in the text, *supra,* is one way to resolve the indeterminacy problem.

which provides that in addition to the objectives set forth in section 801(b)(1), in establishing such rates and terms, the Copyright Royalty Judges may consider rates and terms under voluntary license agreements described in subparagraphs (B) and (C). 17 U.S.C. 115(c)(3)(D). The two subparagraphs referenced therein, subparagraphs (B) and (C), respectively, refer to agreements on ''the terms and rates of royalty payments under this section'' by ''persons entitled to obtain a compulsory license under [17 U.S.C. 115](a)(1)]; and ''licenses'' covering ''digital phonorecord deliveries.'' *Id.* Thus, it is beyond dispute that Congress has authorized the Judges, in their discretion, to consider such agreements as evidence, irrespective of—*or perhaps because of*—the shadow cast by the compulsory license.

Additionally, as noted *supra,* the Judges may consider the existing statutory rates themselves as evidence of the appropriate rate for the forthcoming rate period, *even when those rates were not the product of a settlement.* Indeed, the Judges may consider existing rates as the starting point and the end point of their analysis. *Music Choice, supra,* 774 F.3d at 1012 (the Judges may ''use[ ] the prevailing rate as the starting point of their Section 801(b) analysis'' and may ultimately find that ''the prevailing rate was reasonable given the Section 801(b) factors.'').

Of course, the fact that the Copyright Act and the D.C. Circuit grant the Judges statutory authority to consider and rely on statutory rates and related settlement agreements as evidence does not instruct the Judges as to *how much weight* to afford such agreements. The exercise of that judicial discretion remains with the Judges.

But with regard to the particular issue of the so-called shadow of the statutory rate, there is no reason to find such benchmark agreements *per se* inferior to other marketplace benchmark agreements that may be unaffected by the shadow, because those other benchmarks may be subject to *their own imperfections and incompatibilities* with the target market. Thus, the Judges must not only consider (i) the importance, *vel non,* of any potential ''shadow-based'' differences between the *regulated* benchmark market and an *unregulated* market that might impact the probative value of the former, but also (ii) how those differences (if any) compare to the differences (if any) between the unregulated market and the target market (*e.g.,* differences based on complementary oligopoly power, bargaining constraints and product differentiation).[267] In the present case, because Copyright Owners' and Apple's proposals are structured as per-unit rates, they suffer from deficiencies that dwarf any alleged problems associated by the alleged shadow of the 2012 statutory benchmark; that is, assuming *arguendo* that the shadow on balance is problematic rather than beneficial.

In the present proceeding, the parties weigh-in on the shadow issue with several, more particular, arguments. Copyright Owners emphasize that the purpose of their benchmarking approach is to avoid the distortions of the shadow, by utilizing the unregulated sound recording agreements between labels and interactive streaming services and then applying a ratio of sound recording: musical works royalties, (the latter also in unregulated contexts), to develop a benchmark wholly free of the shadow cast by the statute. 4/4/17 Tr. 4191 (Eisenach) (''[T]he underlying problem with looking at an agreement negotiated under the shadow of a license [is that][i]t shifts bargaining power from the compelled party to the uncompelled party by the very nature of the exercise.'').

The Services' experts discount the foregoing shadow criticism. Indeed, what Copyright Owners considered vice, the Services laud as virtue. That is, the shift in bargaining power is precisely what makes any shadow effect of the statutory license tolerable. Professor Katz points out that rates set voluntarily by the parties in a settlement under the ''shadow'' provide two important benefits. 3/13/17 Tr. 661 (Katz). First, with a statutory rate-setting proceeding as a backstop, large licensors cannot credibly threaten to ''hold out'' and ''walk away'' from the negotiations without an agreement, thereby negating their ability to use their ''must have'' status as a cudgel to obtain rates that can exceed even monopoly-level rates. Second, when such negotiations are conducted with *all the parties* at the figurative table (including perhaps trade associations), no single party, whether licensor or licensee, has disproportionate market power in the negotiations.

I agree with Professor Katz that settlement agreements reached in the shadow are useful. Because the statutory proceeding is the backstop, the power of any entity simply to refuse to strike a deal except on its own unilateral terms is effectively negated. Thus, such settlement agreements tend to eliminate complementary oligopoly inefficiencies, and provide guidance as to an effectively competitive rate. Indeed, this argument is consistent with the Judges' ''shadow'' analysis in *Web IV, supra,* at 26330–31 (noting the counterbalancing effect of the statutory license in establishing effectively competitive rates). Further, when such settlement agreements are industrywide, they tend to eliminate disproportionate market power, and the resulting rates thus may be evidence of a rate that is fair and thus consonant with Factor B of section 801(b)(1). (This issue is discussed in further detail in connection with the Factors B and C analysis, *infra.*) Although Copyright Owners are theoretically correct in noting that some licenses might have otherwise been negotiated at rates higher than the settlement rate that was affected by the shadow, that is simply the tradeoff that the statutory scheme makes in its identification of settlement rates as evidentiary benchmarks. That is, such a theoretical problem needs to be weighed against the salutary aspects of settlement rate structures and rates, discussed *supra.* I find that the benefits of the settlement process, in this proceeding, easily outweigh the loss of any hypothetical deals that may have been reached above the settlement rates, especially because, in the absence of the shadow, rates higher than the settlement rate would be a function, in part, of the Copyright Owners' complementary oligopoly and other market power, which compulsory statutory licensing has been designed to mitigate.

Although I recognize the market-based value of a benchmark agreement reached under the shadow of the statutory license, (indeed, economic actors' settlement agreements are part and parcel *of* the market[268]), I cannot

[267] The Judges note that one of the two benchmarking methods relied upon by Copyright Owners subtracts the *statutory* rate set in *Web III* for noninteractive streaming from a royalty rate derived from the unregulated market for sound recording licenses between labels and interactive streaming services. This would seem to violate the Copyright Owners' own assertion that statutorily set rates are tainted by a regulatory shadow and thus cannot be used to establish reasonable rates. However, Copyright Owners' expert testified that, in his opinion, the Judges in *Web III* accurately identified the market rate for noninteractive streaming, so that rate could be utilized as if it were set in the market. 4/4/17 Tr. 4643 (Eisenach). This assertion proves too much. If one expert on behalf of a party may equate a rate set by the Judges with the market rate, why cannot the Judges, or any other party's expert, do the same with regard to a different statutory rate? The end result of such an approach takes us back to the point the Judges made at the outset in this section: any rate set by the Judges or influenced by the Judges' rate-setting process must be considered on its own merits.

[268] For example, the Judges regularly assume in a benchmarking approach that the contracting parties have ''baked-in'' the values of discrete items in their agreement. *See, e.g., Web IV, supra,* at 26366.

defer to any implicit ''mindreading'' by contracting parties as to the Judges' application of the all the non-market elements of section 801(b)(1). Rather, the Judges have a duty to independently apply the itemized factors listed in the statute. Accordingly, I reject the idea that rates and terms reached through a settlement must be understood to supersede—or can be *assumed* to embody—the Judges' application of the statutory elements set forth in section 801(b)(1). However, if on further analysis, the Judges find that provisions arising from an agreement in fact do reflect the statutory principles set forth in section 801(b)(1), then the Judges may adopt the provisions of that settlement *in toto,* again, if those provisions are superior to the evidence submitted in support of alternative rates and terms.

**5. The ''All-In'' Rate Structure and the ''Mechanical Floor''**

**a. The ''All-In'' Rate Structure**

The current mechanical royalty rate is calculated as a so-called ''All-In'' rate. Simply put, the last step when calculating the mechanical rate is to subtract from the intermediate figure the rate paid by the interactive streaming services to performing rights organizations (PROs) for the ''public performance'' right. All five services (*i.e.,* including Apple) urge the Judges to establish a statutory rate structure for the forthcoming rate period that contains this ''All-In'' feature, whereas Copyright Owners request that the rate for the forthcoming rate period be set without regard to the royalty rate paid by the services to the PROs for the performance rights. I examine the parties' arguments seriatim below.

**i. The Services' Position (including Apple's Position)**

According to the services, a key aspect of the 2008 and 2012 settlements was that the rates paid by services for mechanical royalties would allow for a deduction of expenses for public performance royalties, *i.e.,* the top-line rate paid under the Section 115 license would be ''All-In'' from the services' point of view. Levine WDT ¶ 35; Parness WDT ¶ 7; 3/8/17 Tr. 298–99 (Parness). In this regard, a Google fact witness, Zahavah Levine, testified that as far back as 2001, the streaming services wanted to avoid what she described as a ''double dip'' problem, whereby a service might need to conduct separate negotiations with PROs and with music publishers in order to obtain *usable* musical works license rights. 3/8/17 Tr. 147–148 (Levine). In fact, prior to settlement, some members of the streaming community expressed a view that the value of any mechanical right implicated by interactive streaming is essentially zero, because the Copyright Owners are already compensated through performance payments to the PROs. 3/29/17 Tr. 3645–47 (Israelite). According to Apple, the absence of any separate value in the mechanical rate (when separated from the performance rate) is underscored by the fact that interactive streaming is the only distribution channel that pays *both* a performance royalty and a mechanical royalty. *Rebuttal Testimony of David Dorn* ¶ 10 (Dorn WRT).

Thus, according to the services, a determining factor in the 2008 settlement was Copyright Owners' agreement to a deduction of performance fees, via the acceptance of an ''All-In'' rate. 3/8/17 Tr. 298–301 (Parness); Parness WDT ¶ 7; 3/8/17 Tr. 170–71 (Levine) (explaining benefits of ''All-In'' rate structure). In fact, for the services, according to one of its witnesses, the ''All-In'' nature of the rate was a determining factor in the parties reaching a settlement. 3/8/17 Tr. 300–301 (Parness).

Accordingly, the services argue that this ''All-In'' rate structure is consistent with the parties' expectations in settling *Phonorecords I* and *II. See* SJPFF ¶ 112. Additionally, the Services point out that many direct licenses between musical works copyright owners and streaming services incorporate the ''All-In'' feature of the existing section 115 license. *See* JSPFFCOL ¶¶ 143–145 (and record citations therein). The services also emphasize that the Copyright Owners' recent settlement of the Subpart A rates—approved by the Judges—implies an ''All-In'' feature. Specifically, one of the services' expert economic witnesses, Dr. Leonard, testified that, expressed as a percentage of payments to the record labels (not as a percentage of total streaming service revenue), the subpart A settlement reflects a payment of 15.8% of ''All-In'' sound recording royalties in 2006, and of 14.2% of ''All-In'' sound recording royalties, when compared to payments to record labels in 2015. Leonard AWDT ¶ 46 (noting that ''these ratios are lower than the current ratios of musical works-to-sound recordings royalties contained in Section 385, Subparts B and C (*e.g.,* musical works royalties are between 17.36% and 21% of the service payment to record companies for sound recordings for Standalone Portable Subscription, Mixed Use services covered under Subpart B.'')).[269]

Finally in this regard, the services assert that the Judges have made similar determinations for analogous sets of rights in other proceedings. For instance, they note that the Judges effectively set an ''All-In'' licensing rate for reproductions of sound recordings and performances of sound recordings under 17 U.S.C. 112 and 114. The services analogize the relationship of the performance right and the mechanical right, on the one hand, with the sound recording ephemeral right and the sound recording performance right on the other, characterizing both pairs of rights as ''perfect complements.'' *See* SJPFFCOL ¶ 114 (citing *Web IV,* 81 FR at 26397–98 (discussing bundling of Secs. 112 and 114 rights and noting that licensees ''would be agnostic with respect to the allocation of those rates to the Section 112 and 114 license holders.'').

Separately, as noted *supra,* Apple concurs with the adoption of an ''All-In'' rate in the forthcoming rate period. According to Apple, the Judges should adopt an ''All-In'' rate for interactive streaming because (1) mechanical and performance royalties are *complementary rights* that must be considered together in order to prevent exorbitant costs; (2) the current statute uses an ''All-In'' rate; (3) ''All-In'' rates provide greater predictability for businesses; and (4) recent fragmentation and uncertainty with respect to performance licenses threaten to exacerbate the problems of high costs and uncertainty already present in the industry.'' APFF ¶ 138 *et seq.* (and record citations therein). As a policy matter, Apple maintains that an ''All-In'' rate helps maintain royalties at an economically efficient level because it sets a single value for all of the rights that interactive streaming services must obtain from publishers and songwriters. *See* 3/23/17 Tr. (Ramaprasad) 2667-2669, 2670 (a mechanical-only rate could cause ''exorbitant'' rates, but an ''All-In'' rate would not); *Expert Rebuttal Report of Professor Jui Ramaprasad February 15, 2017* ¶ 13 (Ramaprasad WRT) (a mechanical-only royalty could lead to ''unreasonably high combined royalties for publishers and songwriters''); *see also* Leonard AWDT ¶ 58; Katz WDT ¶ 94; Herring WDT ¶ 59. Accordingly, Apple asserts that, by adoption of an ''All-In'' rate, the streaming services avoid two separate

[269] Of course, the subpart A rates are implicitly ''All-In'' because record companies do not pay performance royalties. I consider further, *infra,* the evidentiary value of the subpart A settlement and rates.

negotiations for the performance right and the mechanical right—ensuring that these two complementary rights are considered in tandem, with the cost of one impacting the cost of the other. *See* Dorn WRT ¶ 15; *see also* 3/13/17 Tr. 587–588 (Katz); 3/15/17 Tr. 1191–1192 (Leonard); Herring WDT ¶ 59.

Further in this regard, Apple maintains, if a full mechanical-only rate were adopted in lieu of an ''All-In'' rate, interactive streaming services would need to pay for mechanical rights pursuant to the statute and then engage in an entirely separate negotiation for the performance right. Dorn WRT ¶¶ 14–15; Ramaprasad WRT ¶ 13. This could lead to an undeserved windfall for publishers and songwriters as, after this negotiation, total royalty payments that interactive streaming services pay for musical works could be exponentially higher than whatever mechanical-only rate the Judges adopt. Dorn WRT ¶¶ 14–15; Ramaprasad WRT ¶ 13. Apple avers that this would be unfair—because the royalty payments are all made to the same entities, *i.e.,* the publishers and songwriters. Dorn WRT ¶¶ 15–16; *see also* Herring WDT ¶ 59.[270]

As noted *supra,* Apple, consistent with the other Services, argues that the ''All-In'' rate structure is particularly important because of relatively recent industry developments. Specifically, Apple takes note of the recent ''fragmentation'' [271] and uncertainty in performance rights licensing that the services all claim to threaten an exacerbation of the existing uncertainty over royalty costs. *See* Dorn WRT ¶¶ 17–18; Ramaprasad WRT ¶¶ 13, 63; Parness WDT ¶¶ 16–20; Katz WDT ¶¶ 87–94; Tr. 3/13/17 Tr. 602–604 (Katz). Apple notes that this problem may be exacerbated because of the emergence of a fourth PRO, Global Music Rights (GMR), in addition to ASCAP and BMI, as well as SESAC which (like GMR, and unlike ASCP and BMI) is not subject to a consent decree and rate court review (as discussed *infra*). Parness WDT ¶ 18; Katz WDT ¶ 91. *See* 3/9/17 Tr. 382–83 (Parness); 3/13/17 Tr. (Katz) 602–604.

In addition to the problems created by potential fragmentation, the services also raise the specter of future ''withdrawals'' by music publishers from one or more PROs. As Apple notes, in the past few years, publishers have taken steps to effectuate such withdrawals, especially from PROs that are governed by consent decrees. Dorn WRT ¶ 18; Ramaprasad WRT ¶¶ 13, 63; Parness WDT ¶ 17; Katz WDT ¶ 91. Apple points to the example of one large publisher, UMPG, which moved a portion of its catalog from ASCAP, a PRO governed by a consent decree, to SESAC, which is not. 3/27/17 Tr. 3207 (Kokakis). Apple also notes that UMPG also fully withdrew from BMI for a brief period in June 2014. 3/27/17 Tr. 3204 (Kokakis). Moreover, Apple maintains that, even when publishers have not actually withdrawn, ''[s]everal publishers of significant commercial importance have threatened [to withdraw entirely from ASCAP and BMI].'' 3/9/17 Tr. 376–81(Parness); *see also* Parness WDT ¶ 17; 3/27/17 Tr. 3206 (Kokakis) (UMPG executive confirming that he and the services ''had discussed at times the possibility of Universal withdrawing'' fully from a PRO); 3/28/17 Tr. 3310–3313 (Kokakis) ([REDACTED]). Apple maintains that these events and threats of withdrawal create uncertainty in the performance rights marketplace and portend a potential increase in performance royalty costs for interactive streaming, which could not be ameliorated in the absence of an ''All-In'' rate. *See* Ramaprasad WRT ¶ 63 (the only certain result of publishers withdrawing is that performance royalties ''will increase''); 3/8/17 Tr. 256–57, 262–63(Levine); 3/13/17 Tr. 602–04 (Katz) (fragmentation leads to higher performance rights costs).

**ii. Copyright Owners' Position Regarding an ''All-In'' Royalty Rate**

Copyright Owners initial argument is jurisdictional in nature; they emphasize that this is a proceeding to set rates and terms for the Section 115 compulsory *mechanical* license to make and distribute phonorecords, *not* to *perform* works. 17 U.S.C. 115, 801(b)(1). More particularly, they note that, whereas the Section 115 compulsory license explicitly applies solely to ''the exclusive rights provided by clauses (1) and (3) of section 106, to make and to distribute phonorecords of [nondramatic musical] works,'' it does apply to the exclusive right provided by clause (4) to perform the work publicly. 17 U.S.C. 106, 115. Thus, Copyright Owners argue, the public performance right provided by 17 U.S.C. 106(4) is an entirely separate and divisible right from the mechanical right at issue in this proceeding and is not subject to the Section 115 license. *See* COPCOL ¶ 314 (citing 17 U.S.C. 106, 115, 201(d); Ex. 920 at 16; 2 *Nimmer on Copyright* Sec. 8.04[B] (''[T]he compulsory license does not convey the right to publicly perform the nondramatic musical work contained in the phonorecords made under that license. Similarly, a grant of performing rights does not, in itself, confer the right to make phonorecords of the work.'')).

Copyright Owners further note that performance royalties are set in negotiations between licensors and licensees, subject to challenge in a ''rate court'' proceeding, and conclude that the Judges cannot set an ''All-In'' rate because they have ''not been vested with the authority to set rates for performance rights because they are not covered by Section 115.'' COPCOL ¶ 315.[272]

Copyright Owners also argue in this regard that the services have not provided evidence in this proceeding to justify and support an ''All-In'' rate, such as evidence showing the rates and terms in existing performance licenses; the duration of such licenses; benchmarks for performance rights licenses; and the impact of interactive streaming on other sources of performance income, including non-interactive streaming, terrestrial radio and satellite radio income. Further, Copyright Owners point out that the PROs and/or all music publishers are all necessary parties for any such determination, but they were not proffered by the services. *See* COPCOL ¶ 319.

For these reasons, Copyright Owners decry as mere ''sophistry'' the services' argument that they are not asking the Judges to set performance rates, but rather only to ''set'' a ''mechanical'' rate that permits them to deduct what they pay as a performance royalty. More particularly, they argue that this approach, if adopted, would leave the mechanical rate indeterminate, subject to whatever is decided in negotiations or judicial action regarding the mechanical rate. *See* COPCOL ¶ 320. Indeed, Copyright Owners note, under the Services' ''All-In'' proposal, the mechanical rate could be zero (if performance royalties are agreed to or set by the rate courts at a rate that is

[270] Pandora and Google separately make the same arguments as Apple in this regard. *See* Pandora PFFCOL ¶¶ 35–36 (and record citations therein); Google PFF ¶ 29 (and record citations therein).

[271] ''Fragmentation'' refers to the existence of more than one owner of copyrights to a musical work, requiring an interactive streaming service to engage in a costly and uncertain attempt to locate each owner and provide it with a separate Notice of Intent and to bear the risk of a potential infringement action if one or more copyright owners is not located. SJPFF ¶¶ 162–63 (and record citations therein).

[272] Copyright Owners note that performance royalties are set directly in negotiations between licensors and licensees, but if the either of the two largest PROs (ASCAP and BMI) and licensees are unable to enter into consensual agreements, they rates are set in a federal court action in the Southern District of New York (before a designated ''rate court'' judge), pursuant to existing Consent Decrees. *See* COPCOL ¶ 316; *Register's Report* at 20, 34, 37, 41.

greater than or equal to the ''All-In'' rate proposed by the Services here)—and, they argue, ''a mechanical royalty rate of zero ''is anything but reasonable.'' COPCOL ¶ 322.

In an evidentiary attack, Copyright Owners demonstrate that the only percipient witness who engaged directly in the 2008 negotiations involving the ''All-In'' rate (or any other matter) was the NMPA president, David Israelite, and that, by contrast, the services' two witnesses, Mr. Parness and Ms. Levine, did not participate directly in those negotiations. *See* CORPFF–JS at 58. Thus, Copyright Owners assert that the services cannot credibly argue based on what the negotiating parties actually intended with regard to, *inter alia,* the ''All-In'' rate.[273]

Copyright Owners also take aim at the services' argument that it matters not whether they pay royalties designated as ''performance'' or ''mechanical,'' because the same rights owners are also receiving performance royalties. According to Copyright Owners, this argument: (1) ignores the fact that the Copyright Act creates separate and distinct mechanical and performance rights, and made only the former subject to compulsory licensing under Section 115; (2) ignores the fact that the rates for the use of those two rights, to the extent not agreed, are set in different jurisdictions; and (3) ignores the disruption that would be caused by eliminating mechanical royalties—disruptions arising from (a) the fact that mechanical royalties are the most significant source of recoupment of advances to songwriters; and (b) songwriters receive a greater share of mechanical royalties than they do of performance royalties (both because of the standard splits in songwriter agreements and the fact that performance income, unlike mechanical income, is diminished by PRO commissions). COPCOL ¶ 323; COPFF ¶ 640.[274] *See also Witness Statement of Thomas Kelly* ¶ 66; *Witness Statement of Michael Sammis* ¶ 27; Yocum WDT ¶ 23; Israelite WDT ¶ 71 (all asserting that combining mechanical royalties and performance income in a single ''All-In'' payment will diminish payments to songwriters, and will negatively impact the publishers' ability to recoup advances, which will, in turn, negatively impact the size and number of future advances).

Copyright Owners further assert that the Services' claim that increasing ''fractionalization'' of licenses justifies an ''All-In'' rate is a red herring. Specifically, they argue that there has *always* been fractional licensing of performance rights by the PROs, because there typically are multiple songwriters and publishers with ownership rights in a song and they may not all be affiliated with the same PRO, and there is no legal basis on which any one PRO has the right to license rights that it does not have. Israelite WRT ¶¶ 65–66; 3/29/17 Tr. 3662–63 (Israelite); HX–327; 3/9/17 Tr. 372–73 (Parness). Moreover, they claim that, contrary to the Services' assertions, the presence of GMR has not altered the extent of fragmentation in any manner, let alone increased the degree of fragmentation in the marketplace. In particular, Copyright Owners point out that the Services admitted that GMR represents fewer than 100 songwriters and has a meager market share of roughly 3 percent of the performance market. 3/9/17 Tr. 365–67 (Parness); *see also* Israelite WRT ¶ 59. Copyright Owners also note that the Services presented no evidence either that there has been an increase in performance rates in licenses issued by GMR, or, more generally, of any actual or potential impact of this alleged ''fragmentation'' of the performance rights marketplace on their interactive streaming businesses. 3/9/17 Tr. 381 (Parness).

Next, Copyright Owners note that the issue of publisher withdrawals from PROs—if it ever was a justification for an ''All-In'' rate—has been overtaken by events. Specifically, they note that the ASCAP and BMI rate courts in the Southern District of New York, the Second Circuit and the Department of Justice have determined that partial withdrawals by publishers are not permitted. Ex. 876, at 4; Israelite WRT ¶¶ 62–63, *citing In re Pandora Media, Inc., supra,* 1.

**b. The ''Mechanical Floor''**

**i. Copyright Owners' Position**

Copyright Owners urge the Judges to retain the Mechanical Floor.[275] They emphasize that the Mechanical Floor establishes a minimum value protecting the mechanical right, in that it cannot be reduced by subtracting the performance royalty as occurs under the ''All-In'' rate. *See* Israelite WRT ¶¶ 19–22, 29, 81; 3/29/17 Tr. 3632, 3634–3636, 3638, 3754, 3764–3765 (Israelite); 3/8/17 Tr. 259 (Levine).

They also note that the revenue displacement and deferral problems they allege to exist under a percentage of revenue ''do not exist'' with the Mechanical Floor because that rate is expressed on a per subscriber basis. COPFF ¶¶ 639–40. [REDACTED]. In this regard, Copyright Owners maintain that the Services' desire to eliminate the Mechanical Floor is nothing other than a ''thinly veiled effort to sharply reduce the already unfairly low mechanical royalties.'' COPFF ¶ 644. The import of the Mechanical Floor is underscored by Dr. Eisenach who testifies that, in 2015, [REDACTED]. *Written Rebuttal Testimony of Jeffrey A. Eisenach, Ph.D.* ¶ 115 (Eisenach WRT).

Copyright Owners further argue that the Mechanical Floor is necessary to preserve a source of royalty revenue for the payment of advances to songwriters and the funding of recoupments of prior advances paid by publishers to songwriters. COPFF ¶ 640 (and record citations therein). They also point out that songwriters benefit more from publishing agreements than from agreements with PROs, because, under current publishing agreements, songwriters typically receive 75% or more of mechanical income whereas the PRO's split performance income 50/50 between publishers and songwriters. *Id.* Finally, Copyright Owners note that the PROs charge songwriters a fee, further reducing the value of the performance income relative to income. *Id.*

**ii. The Services' and Apple's Arguments for Eliminating the Mechanical Floor**

Despite their trumpeting of the 2012 settlement as an appropriate benchmark, the Services (and Apple, which does not rely on the 2012 structure) propose the elimination from that benchmark of the Mechanical Floor in the forthcoming

[273] Copyright Owners take this argument one step further—maintaining that consequently the Services ''have presented no competent evidence that an ''All-In'' rate structure ''is consistent with the parties' expectations in settling *Phonorecords I* and *II.*'' CORSJPCL ¶ 112. It is difficult to conclude that this fundamental rate structure, agreed to in two separate settlements between the parties, was not consonant with their ''expectations.''

[274] Copyright Owners note that, in *Phonorecords I,* Judge Sledge voiced a similar sentiment from the bench, referring to consideration of the performance royalty as a ''waste of time.'' COPFF ¶ 597 (and record citations therein). The Judges are not bound by any prior statement by a Judge that is not a part of a prior determination. Moreover, the Judges note that they are not in this proceeding ''setting'' the performance royalty rate, but rather considering whether that royalty payment should be a deduction in the formula for calculating the mechanical license.

[275] The Mechanical Floor refers to the step in the rate calculation after the ''All-In'' rate has been calculated. If that calculation would result in a dollar royalty payment below the stated Mechanical Floor rate, then the Mechanical Floor rate would bind.

rate period. In support of this position, they make the following arguments:

- When negotiating both the *Phonorecords I* and *Phonorecords II* settlements, the services acquiesced to the Copyright Owners' insistence that this Mechanical Floor be included in the rate structure, because the services believed that the Mechanical Floor was ''illusory,'' *i.e.,* that it was ''highly unlikely to ever be triggered . . . .'' SJPFF ¶¶ 127, 160 (and record citations therein). *See also* Apple PFF ¶¶ 85, 165 (arguing that the Mechanical Floor in the current rate structure adds uncertainty and leads to services paying ''windfall'' royalties to the Copyright Owners well above the ''All-In'' amount); Google PCOL ¶ 22 (asserting that the triggering of the Mechanical Floor in some circumstances has been caused by Copyright Owners leveraging market power). In this regard, the Services assert that the parties who negotiated the *Phonorecords* settlements did not expect a Mechanical Floor to bind, due to longstanding, stable public performance rates. 3/8/17 Tr. 309 (Parness); Parness WDT ¶¶ 9, 21; Levine WDT ¶ 35; 3/8/17 Tr. 254:24–256:8 (Levine).
- Past and potential future fragmentation of the licensing of public performance rights, threatened withdrawals by music publishers from PROs and the advent of new PROs, all combine to increase the likelihood that the Mechanical Floor will be triggered. Katz WDT ¶¶ 87, 91.
- Because mechanical rights and public performance rights are ''perfect complements'' from the perspective of an interactive streaming service, there is no economic rationale for setting the two rates separately from one another. *Id.* ¶ 88. *See also* Leonard AWDT ¶¶ 56, 82–83 (relying on the ''perfect complements'' argument to advocate for an elimination of the Mechanical Floor). Marx WDT ¶¶ 135, 165 (''Economic efficiency would be improved by removing the $0.50 per-subscriber fee floor from the paid subscriber mechanical royalty formula'' and ''[REDACTED]'').
- [REDACTED] *Id.*
- Triggering of the Mechanical Floor would not reflect an increase in the value of performance rights or mechanical rights, but rather would reflect the ability of copyright holders to exert market power over interactive services in the form of supra-competitive performance rights license fees. *Id.* 94.
- A Mechanical Floor defeats the benefits of an ''All-In'' rate. Apple PFF ¶¶ 164–167. (and record citations therein).
- It is incorrect that Copyright Owners ''had no control over'' public performance rates. The Services note that the same publishers that are members of the NMPA board, controlling its policy and strategy, are also member of the board of ASCAP, the largest PRO. SJRPFF–CO at p. 284 (citing *In re Pandora Media, Inc.,* 6 F. Supp. 3d 317, 341 (S.D.N.Y 2014) (describing how representatives of UMPG, Sony/ATV, and BMG all work with each other as ASCAP board members and work with David Israelite of the NMPA).

[REDACTED]

**c. Findings Regarding the ''All-In'' Rate and the Mechanical Floor**

I find that the ''All-In'' rate is a necessary and proper element of the 2012 benchmark, and must remain in the rate structure for the forthcoming rate period. As an initial matter, I reject Copyright Owners' argument that the ''All-In'' feature is unlawful because the Judges do not regulate performance rates. The ''All-In'' feature does not constitute a regulation of the performance rate, but rather represents a *cost exclusion* (or *deduction*) from the mechanical rate. I recognize, as do the parties, that the royalties otherwise due under a revenue-based format may exclude certain costs. *See* 73 CFR 385.11(Definition of ''Service Revenue,'' paragraph (3) therein).[276]

The exclusion of performance royalties in the ''All-In'' calculation is also necessary, because—as all parties and economists agree—mechanical rights and performance rights are perfect complements. That is, each right is worthless without the other. *See generally, Varian, supra,* at 40 (''Perfect complements are goods that are always consumed together in fixed proportions . . . A nice example is that of right and left shoes. . . . Having only one out of a pair of shoes doesn't do the consumer a bit of good.'').

Accordingly, if the mechanical rate was set in this proceeding without a credit for the performance rate, the perfect complementarity of the two licenses would be ignored, and the interactive streaming services would pay two times for the same economic right—the right to stream the musical work embodied in the sound recording. Further, as the Services note, there is a substantial overlap not only in the songwriters who receive royalties from both licenses, but also in the entities that negotiate these rates on their behalf. Thus, it is appropriate to continue to recognize the economic and bargaining-entity overlaps by continuing to exclude the performance rate through the ''All-In'' rate structure. In this regard, I agree with the Services and Apple that the Judges' treatment of the ephemeral license as embodied within the sound recording license in combined section 112 and 114 proceedings is implicitly an acknowledgment that the royalties for licenses which are perfectly complementary can be calculated in a manner that reduces one royalty to reflect another royalty *i.e.,* the sound recording license is reduced by the value of the ephemeral license. *See Web IV,* 81 FR, *supra,* at 26398 (''The Judges . . . find that the minimum fee for the [s]ection 112 license should be subsumed under the minimum fee for the [s]ection 114 license, 5% of which shall be allocable to the [s]ection 112 license holders, with the remaining 95% allocated to the [s]ection 114 license holders.''). Of particular importance for this Dissent is the fact that the subsuming of the section 112 ephemeral license fee within the section 114 license was done *at the behest of the parties,* and in fact dates back to the parties' agreement as to that issue since *Web I. See Web IV, supra,* 81 FR at 26396–97 (''The current $500 minimum fee for commercial webcasters has been in force for more than a dozen years, and has been voluntarily re-adopted by licensors and licensees.'').[277]

However, the performance license and the mechanical license, while overlapping in important respects, do not overlap in all respects. Consequently, I find that, for several reasons, the Mechanical Floor now in the regulations should also be included in the rate structure for the forthcoming rate period.

First, the fact that the performance right and the mechanical right are necessary complements *to the licensees* does not end the inquiry. As Copyright Owners point out, the mechanical royalties are used by the publishers in part to fund advances to songwriters, and their subsequent recoupment, thus providing an important source of liquidity to songwriters, pending the later payment of royalties. If the ''All-In'' rate substantially reduces or fully eliminates the mechanical portion of the calculation, the pool of funds available for advances and recoupments would be reduced.

Thus, the Services' argument that the mechanical right has no standalone value, while sufficient to support an ''All-In'' rate, is incomplete and, to an extent, self-serving, with regard to the Mechanical Floor issue. To the music publishers and songwriters, the

[276] I recognize that the reduction of the mechanical rate interim calculation by the amount of the performance rate in ''Step 2'' (*see* § 385.12(b)(2)), acts as an exclusion from royalties rather than a deduction from revenue (by analogy, just as a tax credit is a subtraction from taxes, whereas a tax deduction is a subtraction from income). However, there is no statutory or regulatory impediment that prohibits this exclusion from royalties. Also, it is noteworthy that the costs that are excluded under current § 385.12(b)(2) are all costs over which the Judges have no authority.

[277] The consensual nature of the handling of these perfect complements in *Webcasting* proceedings underscores the difference between the appropriateness of adopting an ''All-In'' rate that has been the subject of long-standing agreement in this proceeding (ten years) and the inappropriateness of the majority's binding of the parties in this proceeding to the rates of another perfect complement, the sound recording rate.

mechanical right *does* have a separate value, in the funding of songwriters, a value not provided by the performance royalty. It is essentially a source of royalty revenue that has been designated and created through an arm's length negotiation, by which songwriter advances and recoupments can be funded. The fact that this pool or source of revenue arises from the payment by services for the mechanical right that is a perfect complement (from their perspective) to the performance right is not the point; Copyright Owners have a right to the benefit of the 2012 bargain[278] that identified a floor below which their source of advances/recoupment funds would not fall. By analogy, the cost of any publisher input, not just the cost of providing liquidity to songwriters, such as, for example, the cost of heating the buildings in which songwriters toil, has no direct, standalone value to the services, yet no one would assert that the licensors are not entitled to a pool of royalty revenue sufficient to recover their heating costs. Liquidity funding for songwriters is a necessity, just as heat is a necessity—and the complementary nature of the rights *to the Services* is of no relevance in that regard. (In fact, providing financial liquidity to songwriters, like providing them with a heated building, of course indirectly does benefit the services, because songwriters who are financially illiquid or physically frozen from lack of heat, are equally unable to write the musical works that the services must play.)[279]

In recognition of the importance of advances to songwriters, Professor Katz speculates that the problem of recouping advances could be solved by transferring some of the advancements from the music publishers to the PROs. 3/13/17 Tr. 607 (Katz). However, I am loath to join in speculation that parties over whom the Judges have no jurisdiction will voluntarily change the conduct of their businesses, and then bootstrap those speculative predictions to support their rulings.[280]

Second, although the services assert that they had dismissed the triggering of the Mechanical Floor as "illusory," that dismissal was demonstrably incorrect, as evidenced by the large number and percent of service-months in which the Mechanical Floor has been triggered. Moreover, [REDACTED]. Marx WDT ¶ 76. More generally, the Mechanical Floor provides a form of insurance to Copyright Owners that the mechanical royalty will not be reduced or eliminated if services trigger that rate alternative because of relatively high performance rates.

Third, I am unpersuaded by the Services' argument that the sole reason the Mechanical Floor has been triggered is because the performance royalty rate has increased significantly "to levels not foreseen when the Mechanical Floor was negotiated." SJRPFF–CO at pp. 411–12. I find that criticism puzzling; the *purpose* of the Mechanical Floor is to limit the extent to which the performance royalty rate would diminish the mechanical rate through the "All-In" approach. Thus, the services are asserting that the essential nature of the Mechanical Floor is a bug, when in fact it is a defining feature—again, a form of rate insurance for which the music publishers/songwriters bargained, and to which the services acquiesced, when agreeing to the 2008 and 2012 settlements.

Fourth, I do not find that the potential for further fragmentation of musical works licenses and publisher withdrawals is a sufficient reason to consider eliminating the Mechanical Floor. Copyright Owners have convincingly argued that: (1) Services have offered no evidence that the introduction of the new PRO, GMR, will have any impact on the performance royalty rate; (2) partial withdrawals are not permitted by the rate court, the Second Circuit or the Department of Justice; (3) there is no evidence of increasing performance rates (and the rate courts can ensure "reasonable" rates charged by the two largest PROs, ASCAP and BMI); and (4) some fractional (a/k/a fragmented) licensing has always been present in the market. *See* CORPFF–JS at pp. 87–90 (and record citations therein).

Fifth, I reject a further complaint, [REDACTED], that the Mechanical Floor is perverse, because lower retail pricing that diminishes revenues will increase the likelihood that the Mechanical Floor will bite. I see this too as a feature of this floor—not a bug. As Pandora's witness, Mr. Parness, explained (*see* 3/9/17 Tr. 354 (Parness)), the Mechanical Floor was made part of the ongoing settlement terms expressly *because* Copyright Owners were fearful that retail pricing would be too low and generate decreased royalties under other prongs.

Finally, I do not agree with the assertion that the presence of the Mechanical Floor rate "defeats the benefits" of an "All-In" rate. To be sure, the Mechanical Floor *limits* the value of the effective cost reduction embodied in the "All-In" rate, but that limitation does not *defeat* the "All-In" rate. This critique actually underscores a broader infirmity in the services' arguments in opposition to a continuation of the Mechanical Floor. They maintain that the 2012 settlement, carrying forward essentially the structure of the 2008 settlement, has worked satisfactorily for licensors and licensees alike. I agree, finding that the present rate structure should be continued. However, the Services, contrary to their basic argument, seek to disrupt the status quo that they otherwise recommend, in order to obtain a *better bargain* than contained in that benchmark. To put the point colloquially, the Services cannot have their cake and eat it too.

**6. Findings Regarding the Rate Structure**

Based on the foregoing, and as detailed further below, I conclude that the 2012 rate structure constitutes a usable objective benchmark in this proceeding.[281] Based on the foregoing, I reject the per-unit rate structure advocated by Copyright Owners. I also reject the services' proposal to eliminate the Mechanical Floor.

[278] I note that the majority maintains the Mechanical Floor. However, the Mechanical Floor was part of the trade-off of consideration within the 2012 benchmark settlement. It is inconsistent for the majority to maintain this vestige of the 2012 benchmark while rejecting its other aspects, in favor of the post-hearing rate structure they have created. This yet another example of how the majority's rate structure—to borrow from Copyright Owners' analogy—picks provisions from columns A, B . . . and now C, when inventing its post-hearing structure.

[279] From a more technical economic perspective, all productive upstream inputs benefit downstream re-sellers.

[280] This is the same principle that leaves me reluctant to rely on *speculation* inherent in the Majority Opinion and in Copyright Owners' "see-saw" assertion regarding an assumed willingness by record companies to agree to a decrease in sound recording royalties in response to an increase in mechanical royalties, as discussed *infra.* Also, the point in the accompanying text should be contrasted with the basis for adoption of an "All-In" rate: The industry over which the Judges have jurisdiction in this proceeding for ten years has operated under a rate structure (which I find to be a useful benchmark), that incorporates the "All-In" adjustment to account for the performance royalties. Thus, the Mechanical Floor and the "All-In" structure are both parts of the 2012 benchmark, revealing the parties' longstanding *willingness and ability* to operate under an overall structure in which performance royalties are subject only to *a limited deduction* in the calculation of the mechanical royalty.

[281] I note once again that, separate and apart from its usefulness as a benchmark in this proceeding, the existing rate structure can also constitute a reasonable rate that the Judges may adopt, particularly in the absence of any contrary probative record evidence. *See Music Choice, supra,* 774 F.3d at 1010.

**7. The 2012 Benchmark, in its *Entirety*, is a More Useful Benchmark than a Per-Unit Rate Structure or the Services' Modified Version of the 2012 Benchmark**

I further find that the discriminatory rate structure in the 2012 benchmark renders it a more useful benchmark than the per-unit proposals set forth by Copyright Owners and Apple. Although the 2012 rate structure is not necessarily the best structure that could have been designed, it possesses the characteristics of a useful and beneficial benchmark. In that regard, I take note of the four classic characteristics of an appropriate benchmark, as identified by the federal rate court:

In choosing a benchmark and determining how it should be adjusted, a rate court must determine [1] the degree of comparability of the negotiating parties to the parties contending in the rate proceeding, [2] the comparability of the rights in question, and [3] the similarity of the economic circumstances affecting the earlier negotiators and the current litigants, as well as [4] the degree to which the assertedly analogous market under examination reflects an adequate degree of competition to justify reliance on agreements that it has spawned.

*In re Pandora Media, supra,* at 354.

The 2012 benchmark meets these criteria. First, it pertains to the same rights at issue in this proceeding. Second, the licensors (music publishers) and licensees (interactive streaming services) categories are comparable (if not identical).[282] Third, the economic circumstances are sufficiently similar and the same in crucial respects, *i.e.,* the ongoing differentiated nature of this marketplace and the zero marginal physical cost of the licensed copies, (as discussed *supra*). Fourth, the 2012 benchmark it reflects a rate structure with an adequate degree of competition because, as explained in connection with the discussion of the shadow effects, it is a rate free of complementary oligopoly effects and of an imbalance in market power. Further with regard to this fourth point, the parties have been operating over the past ten years under this basic rate structure, with profits accruing to the licensors and admittedly tolerable losses for the licensees.

More particularly, I re-emphasize that, as a matter of law, section 115 specifically provides that settlements shall constitute evidence of market rates. Therefore, I cannot simply disregard the settlement rates as immaterial evidence. *See* 17 U.S.C. 115(c)(3)(D). Of course (as noted *supra*), the Judges may give whatever weight they think is proper to such evidence, without running afoul of any statutory duty. As explained in further detail below, for a number of reasons, I not only find this benchmark useful, I also accord substantial weight to this benchmark.

First, the record indicates that Copyright Owners have demonstrated (albeit tacitly) their understanding that, if the Judges did not set a price discriminatory rate structure to reflect the varying WTP, *Copyright Owners would have to invent it.* This finding is apparent from a careful reading of their advocacy for the adoption of a bargaining room approach to rate-setting. That approach is explicitly premised on the idea that Copyright Owners would offer to enter into multiple and different price discriminatory agreements with various services, if the high statutory rate set under the bargaining room theory is *too high* for some services to operate. This point is made clear by the testimony of Professor Rysman and Dr. Eisenach. *See, e.g.* 4/3/17 Tr. 4390, 4431 (Rysman) (lauding the bargaining room approach as reflecting the ''economical element of *price discrimination* . . . the [licensor] is picking its price*s* carefully.'') (emphasis added).

The following colloquy between the Judges and Dr. Eisenach is also instructive:

[THE JUDGES]

Are you familiar with the concept of the bargaining theory of rate setting . . . [t]he idea that rate setters, such as this Board, should set rates that are higher than the market rate for certain users because they can then, as you are testifying to now, can bargain with the licensors for lower rates to use a bargaining concept in the setting of rates?

[DR. EISENACH]

So as you have just stated it, I think that is consistent with my testimony in this matter, which is that the compulsory license serves as a back-stop. It is a guaranteed cap on what anyone would have to pay. The ability to negotiate mutually beneficial bargains below that cap is there for all of the parties. And the incentives to do so are there as well.

4/4/17 Tr. 4845 (Eisenach) (emphasis and underscore added); *see also id.* at 4843–44 (''one thing that I took into account in considering . . . higher mechanical rates . . . is the ability of streaming services to negotiate direct deal*s* with the publishers. . . . We're looking here at an upper and not a lower end. . . . [I]f the Copyright Owners' proposal were adopted, [the services] would have the ability to negotiate direct *agreements* with publishers.'') (emphasis and underscore added).

Professor Rysman, echoed Dr. Eisenach in this regard, when discussing the potential impact on Spotify of Copyright Owners' proposed substantial rate increase:

[REDACTED]

4/3/17 Tr. 4390, 4431 (Rysman) (emphasis added).

Thus, I find there to be no real dispute as to the need for an upstream discriminatory rate structure. To borrow from a classic story, I perceive that the parties are not in disagreement as to what kind of rate structure is needed in the market, but are rather ''haggling over the price.'' [283] Perhaps more importantly, the parties appear to be in disagreement as to who and what shall be in control of the setting of rates, the Judges and the statute on the one hand, or Copyright Owners and the unregulated market on the other. The answer is—as it must be according to statute—that it is the Judges who set the rates. They are instructed by statute and guided by precedent to set a reasonable rate and to consider several itemized factors, not to cede that authority to any market participant.[284] Further, as Professor Katz testified, the statutory license, and negotiations undertaken under the so-called shadow of that license, incorporate a countervailing power that allows the streaming services a more equal bargaining position. 3/13/17 Tr. 577 (Katz). Under the bargaining room approach, that salutary aspect of the statutory scheme would be eliminated.

Second, and related to the prior point, I find the 2012 rate structure to be a very useful benchmark because it embodies a price discriminatory rate structure that reflects the downstream market's segmentation by WTP. Although Copyright Owners correctly argue that discriminatory upstream rates are not *required* in order to accommodate downstream price discrimination, they do not provide a sufficient counter-argument to the Services' point that the upstream rate should also be price discriminatory in order to *incentivize,*

[282] Copyright Owners assert that the different identities of the licensees, particularly the market entry of Amazon, Apple and Google, and their bundling and discounting of interactive streaming, diminish the comparability of the 2012 benchmark. The Services note that even prior to the entry of these three entities, similar multiproduct firms were licensees—including Yahoo and Microsoft. I discuss the bundling and discounting issues elsewhere in this Dissent.

[283] The provenance of the story in which the quoted phrase is the punch line is uncertain, and has been variously attributed to, *inter alios,* George Bernard Shaw, Winston Churchill, Groucho Marx, Mark Twain, W.C. Fields, and Bertrand Russell.

[284] This point underscores a defect in the Majority Opinion. Under its provisions, participants in a neighboring market, the record companies in the sound recording market, who license their own perfect complement, will have economic control over the mechanical royalty rate, via the TCC prong.

rather than jeopardize, the downstream licensees' satisfaction of the varying WTP among listeners. Absent such a structure, the services are more likely to face the vexing problem of essentially fixed revenues and variable costs, under the ''all-you-can-eat'' model demanded by listeners. Although Copyright Owners may well be correct in their argument that an upstream discriminatory rate structure can be accomplished without resort to a revenue-based rate structure (that is, for example, via different per-play rates), neither Copyright Owners nor Apple proposed such an alternative discriminatory rate or provided evidence by which the Judges could mold such rates (as they did in *Web IV*).

Third, I find insufficient evidence to support Copyright Owners' assertion that the market in 2012 was not yet ''mature''—compared with the market at present—and that the 2012 rate structure was thus ''experimental.'' At a high level, all markets are not ''mature,'' in the sense that they are dynamic and thus subject to change, making all rate structures ''temporary,'' if not ''experimental.'' Moreover, the ongoing creative destruction in the streaming industry has only reinforced the fact that, even since 2012, the interactive streaming services market is still not yet ''mature.'' *See. e.g., Written Direct Testimony of Paul Joyce (on behalf of Google Inc.)* ¶ 17 (Joyce WDT) (describing Google Play Music as ''nascent compared to other participants in the streaming music market.'') [285]

However, even if Copyright Owners' maturity/experimental argument had merit, it does not supersede the convincing economic logic that a price discriminatory rate structure remains appropriate, because the economic fundamentals endure. The cost of producing an additional copy of a musical work remains zero. A market segmented by WTP is efficiently served through price discrimination. Upstream demand for licenses is a derived demand, *see* 3/20/17 Tr. 1967–68 (Marx), and thus a function of the segmented downstream demand, making an upstream discriminatory rate structure more efficient, even if not necessary. I find that, in a second-best world such as the interactive streaming industry, a consonance between upstream and downstream pricing structures enhances efficiency.[286]

Fourth, Copyright Owners argument that the 2012 benchmark, with its attendant multi-pronged rate structure, is inconsistent with the idea that a musical work has (or should have) a single ''inherent'' value, *see, e.g.,* Israelite WDT at 10; ¶ ¶ 29(B), 30, 31(C); Brodsky WDT ¶ 68, is actually inconsistent with Copyright Owners' own proposed rate structure. That is, Copyright Owners' proposal, that *the statutory rate automatically should shift* from a per-play rate to a per-user rate if the latter leads to greater royalties, belies their fealty to the ''inherent value'' argument. Rather, their greater-of approach demonstrates their eagerness to jettison this concept if another measurement tool (the per user rate) could result in greater revenue. That is, Copyright Owners' proposal seeks to accommodate two separate values (value-in-use and access (option) value, while denying that *other* marketplace values can exist, even if they reflect varying WTP and varying ability-to-pay).

I recognize that the 2012 benchmark is also a greater-of approach, but it blends into that approach a ''lesser of'' approach (per subscriber or TCC) within one of the ''greater of'' prongs. *Thus, there is no real fundamental dispute between Copyright Owners and the Services as to whether rates may be disconnected from unit pricing.* Rather, the question is whether the disconnect will be made to benefit only Copyright Owners (in a manner that would cause substantial negative impact to Services, (as detailed in Professor Ghose's rebuttal testimony, discussed *supra*), or will be structured to reflect the parties' historical and ongoing bargain that softens and balances the impact of a greater-of structure. *See* 4/7/17 Tr. 5584 (Marx) (noting that Copyright Owners' ''greater-of'' proposal lacks the balance in the 2012 structure that combines a ''greater of'' structure'' with a ''lesser of'' prong). [287]

Fifth, I rely on the 2012 rate structure as an *objective* benchmark. Thus, the absence of more direct testimony regarding what went through the minds of the negotiators of the 2008 and the 2012 settlement does not diminish the objective value of this benchmark. I do not place dispositive weight on the *subjective* reasons why the parties may have entered into the prior settlements. I view the terms of the 2012 settlement as potential *objective* benchmark information. *See, e.g.,* 3/13/17 Tr. 550–51, 566 (Katz) (acknowledging his lack of knowledge as to why the parties negotiated specific provisions of the 2012 settlement, but noting that objectively the results of the settlement demonstrate the satisfactory performances of the market). Further, both Professor Katz and another Services' expert, Professor Hubbard, noted that the current rate structure remains valuable, not based on their consideration of the parties' subjective understandings at the time of settlement, but rather because the market has not since changed in a manner that would create a basis to depart from a multiple-rate upstream rate structure. Katz WDT ¶ 80 (''My analysis has identified no changes in industry conditions since then [2012] that would require changing the fundamental structure of the percentage-of-revenue prong.''); 4/13/17 Tr. 5977–78 (Hubbard) (changes in the market are ''not uncorrelated with the structure that was in place'' in 2012). In this regard, it bears emphasis that Dr. Eisenach, quite properly, relied on several potential benchmarks for his rate analysis, without attempting to examine the parties who negotiated those benchmark agreements. He too was treating potential benchmarks in an objective manner, consistent with my understanding of the long-standing method of using benchmarks for the setting of rates.

Sixth, I do not credit the arguments by Copyright Owners and Apple (and by the majority) that the present rate structure is complex. If some songwriters find their royalty statements confusing, that is a real concern that should be resolved. However, one of the benefits of a collective, be it the publishers themselves, or, the NMPA, the NSAI or a PRO, is that these collectives have the expertise and resources to identify and explain how

[285] In this regard, it is noteworthy that another of Copyright Owners' expert economic witnesses—expressly echoing a prior licensor expert in *Phonorecords I*—opines that the present interactive streaming market is ''unlike a mature business.'' *See* Watt WRT ¶ 40 (''Interactive streaming of music is a relatively new enterprise, made of some relatively new companies and companies new to the space.''). Although Professor Watt was making this point for the purpose of explaining how to identify revenues and costs for inclusion in a Shapley value analysis (discussed *infra*), unlike ''Schrodinger's Cat,'' the interactive streaming market cannot be two contradictory things at once, simultaneously ''mature'' for the purpose of avoiding a discriminatory rate structure and ''not mature'' for Shapley purposes.

[286] Of course, as explained *supra,* all second-best markets are inefficient in the static sense. Thus, under the bargaining room approach that Copyright Owners endorse, they would exchange one ''inefficiency'' (percent of revenue pricing) with another (unit pricing above marginal cost) and then seek to negotiate away the latter inefficiency, outside the ''reasonable rate'' requirement and without regard to itemized statutory factors in section 801(b)(1).

[287] Again, it bears emphasis that the 2012 benchmark provides Copyright Owners with an access (option) value prong, in the form of a per-subscriber rate.

royalties are computed and distributed. There is no good reason why the rate structure that is consonant with the parties' ten year history and with the relevant economic model should be sacrificed on the slender argument that ''simpler is better than complicated.'' I agree that, *ceteris paribus,* the rate structure should be simple but, as Albert Einstein is credited with saying: ''Everything should be made as simple as possible, *but no simpler.*'' The 2012 rate structure meets this criterion.[288]

Accordingly, for the reasons set forth in this Section III of the Dissent, I find the 2012 rate structure, in its entirety, to be the appropriate benchmark for the rate structure in the forthcoming period.

## I. THE PARTIES' PROPOSED RATES

Establishing a rate structure resolves only one aspect of the overall rate determination. The next issue to decide is whether the rates *within* the 2012 benchmark are appropriate, whether they need to be changed and, if so, whether the record provides a basis for identifying different rates. Unlike the majority, I hew to the record, and do not attempt to divine from the record brand new post-hearing rates (or rate structures) that were never presented by the parties, and thus never subjected to examination by the parties' counsel and economists.

Copyright Owners have identified per play and per user rates in their rate proposal. Although I have rejected that rate *structure,* I review Copyright Owners' evidence regarding the setting of such rates. If that evidence is informative, and if the record permits, I would attempt to convert Copyright Owners' per-unit rate proposal into a percent of revenue rate with appropriate minima, consistent with the 2012 benchmark rate structure.

On the other side of the ledger, several of the Services' expert economists have asserted that, although the 2012 benchmark sets forth a generally appropriate rate *structure,* and that the rates have been acceptable to the Services, the rates within that structure are in fact too high and should be reduced for the forthcoming rate period. Accordingly, I also examine those lower rates to determine if they should be incorporated into the 20212 benchmark for the forthcoming rate period.

### 1. The Copyright Owners' Benchmark Rates

#### a. Overview of Approach

Copyright Owners identified potential rates through an analysis undertaken by one of their economic experts, Dr. Eisenach, of several benchmarks, and of relationships between musical works and sound recording royalties that he identified in various markets. He began by noting that ''an economically valid approach for assessing the value of intellectual property rights which are subject to compulsory licenses is to examine *market-based valuations* of reasonably comparable benchmark rights—that is, fair market valuations determined by voluntary negotiations.'' Eisenach WDT ¶ 8 (emphasis added). In selecting potential benchmarks, Dr. Eisenach identified what he understood to be key characteristics that would make a benchmark useful: ''[U]nderlying market factors . . . ; the term or time period covered by the agreements; factors affecting the relative bargaining power of the parties; and differences in the services being offered.'' *Id.* ¶ 80.

Dr. Eisenach found useful the license terms for the *sound recording rights* utilized by interactive streaming services, because they are negotiated freely between record companies and the interactive streaming services. *Id.* These rates made attractive inputs for his analysis because they: (1) relate to the same composite good—the sound recording that also embodied the musical work; and (2) the interactive streaming service licensees were the same licensees as in this proceeding. Thus, to an important degree, Dr. Eisenach found these agreements to possess characteristics similar to those in the mechanical license market at issue in this proceeding. Moreover, Dr. Eisenach found that ''[d]ata on the royalties paid under these licenses are available and allow . . . estimat[ion of] the rates actually paid by the [interactive] streaming services to the labels for sound recordings on both a per-play and a per-user basis.'' *Id.*

However, as Dr. Eisenach noted, these benchmark agreements related to a different right—the right to a license of *sound recordings*—not the right to license musical works broadly, or to the mechanical license more specifically. Thus, as with any benchmark that does not match-up with the target market in all respects, Dr. Eisenach examined how the rates set forth in the sound recording: interactive streaming benchmark agreements could be utilized. *Id.* More particularly, Dr. Eisenach posited that there may be a relationship—a ratio—between the sound recording royalty rate and the musical works royalty rate. To that end, he ''examine[d] a variety of markets in which sound recording and musical works rights are *both* required in order to ascertain the relative value of the two rights as actually reflected in the marketplace.'' *Id.* (emphasis added).

Through this examination, Dr. Eisenach concluded that these proposed benchmarks ''establish upper and lower bounds for the relative value of sound recording and musical works rights . . . estimate[d] to be between 1:1 and 4.76:1.'' *Id.* To make these ratios more instructive, I note that the inverse of these ratios (*e.g.,* 1:4.76 instead of 4.76:1) can be expressed as a percentage. Thus, the ratio of 1:4.76 is equivalent to a statement that musical works royalties equal 21% of sound recording royalties in agreements struck in the purported benchmark market. More obviously, the 1:1 ratio means that, in agreements within that purported benchmark market, musical works royalties equal 100% of sound recording rates. By converting the ratios into percentages, it becomes apparent that the high end of Dr. Eisenach's benchmark range is almost five times as large as the low end of the range.

#### b. Economic Relationship between Sound Recording and Musical Works Rights

Dr. Eisenach testified that ''[f]or music users that require both sound recording rights and musical works rights, the two sets of rights can be thought of in economic terms, as *perfect complements* in production: Without both inputs, output is zero.'' *Id.* ¶ 76 (emphasis added). Dr. Eisenach also notes that, ''for interactive streaming services, the two categories of rights [sound recordings and musical works] are further divided into a reproduction license [*i.e.,* the mechanical license] and a performance license. . . .'' *Id.* (Thus, the mechanical license and the performance license likewise are perfect complements with each other and with the sound recording license.)

Dr. Eisenach acknowledges that ''[t]he relative value of sound recording [to] musical works licenses may depend on a variety of factors, and traditionally the relationship has differed across different types of services and situations.'' *Id.* ¶ 78. Dr. Eisenach eschewed unnecessary ''assumptions, complexities and uncertainties associated with theoretical debates'' as to why the particular existing market

[288] I note that Copyright Owners not only voluntarily agreed to this multi-tiered rate structure in 2008, they were the parties who had proposed this structure, and they then ratified its usefulness by adopting it anew in the 2012 settlement. Moreover, Copyright Owners agreed to a similar tiered structure for the new subpart C rates in that 2012 settlement. These facts belie the assertion that Copyright Owners found this rate structure to be too confusing.

ratios existed. *Id.* ¶ 79. Rather, instead of ''put[ting] forward a general theory of relative valuation,'' he found it ''sufficient . . . to assume that the relative values of the two rights should be stable across similar or identical market contexts.'' *Id.*

**c. Dr. Eisenach's Potential Benchmarks**

Dr. Eisenach considered a variety of benchmark categories in which the licensee was obligated to acquire licenses for musical works and licenses for sound recordings. His selection and consideration of each category of benchmark markets are itemized below.

**i. The Current Section 115 Statutory Rates**

The current statutory rate structure contains several alternate rates explicitly calculated as a percentage of payments made by interactive streaming services to the record companies for sound recording rights. As noted *supra,* such rates are identified in the industry as the ''TCC'' rates, the acronym for ''Total Content Cost.'' *Id.* ¶ 82. In the Subpart B category, the TCC is 22% for ad-supported services and 21% for portable subscriptions. *Id.*; *see also* 37 CFR 385.13(b)(2) and (c)(2).[289] These percentage figures correspond to sound recording: musical works royalty ratios of 4.55:1 and 4.76:1, respectively.

Dr. Eisenach notes that these statutory rates were not set by the Judges pursuant to a contested hearing, but rather (as noted *supra*) reflect two consecutive settlements (spanning approximately a decade), first in 2008 and again in 2012. *Id.* ¶ 83. Dr. Eisenach discounts the value of these settlement rates for three reasons. First, he notes that they were established prior to the ''marketplace success'' of Spotify in the interactive streaming industry.[290] Second, he notes that the settlements, although voluntary, ''were negotiated under the full shadow of the compulsory license.''[291] Third, he finds that, although the settlement incorporates rate prongs based on a percent of sound recording rates (the TCC prongs), those provisions are part of a ''lesser of'' segment of the rate structure, and thus capped by alternative per subscriber rates. *Id.* & n.70. Thus, Dr. Eisenach concludes: ''In my opinion, the evidence . . . indicates that the relative valuation ratios implied by the current Section 115 compulsory license . . . represent *an upper bound on the relative market valuations* of the sound recording and musical works rights.'' *Id.* ¶ 92 (emphasis added). (As an ''upper bound,'' these ratios would represent the lower bound of the reciprocal percentage of the value musical works rights relative to sound recording rights, again, 21% and 22%.)

The 21% and 22% TCC rates within section 115 identified by Dr. Eisenach imply certain approximate percent-of-revenue rates, *i.e.,* percent of total service revenue (not percent of sound recording revenue). For example, if the sound recording royalty rate for interactive streaming is [REDACTED] %,[292] then, using these section 115 TCC figures, the implied musical work royalty rate would be calculated as [REDACTED][ %, or [REDACTED] %. To take the low end of the range, if the sound recording royalty rate is [REDACTED] % then, applying these TCC figures, the implied musical work royalty rate would be calculated as [REDACTED] %, or [REDACTED] %. Again, because Dr. Eisenach opines that these are *upper bounds on the relative market valuations,*'' that is the equivalent of opining that they represent *the lower bound of a percentage-based royalty calculated via this ratio approach.*

**ii. Direct Licenses between Parties Potentially Subject to a Section 115 Compulsory License**

Dr. Eisenach also examined direct agreements between record companies and interactive streaming services that contain rates for sound recordings and mechanical royalties, respectively. *See, e.g., id.* ¶ ¶ at 84–91. In such cases, the ratio of sound recording:musical works royalties ranged tightly between 4.2:1 to 4.76:1, closely tracking the regulatory ratios implicit in the section 115 TCC. *Id.* ¶ 92. (The 4.2:1 ratio equates to a TCC rate of 23.8%, and the 4.76:1 ratio equates to a mechanical rate of 21%.)

According to Dr. Eisenach, the similarity of these direct contract rate ratios to the statutory ratios reflects the ''shadow of the statutory license,'' by which direct negotiations between parties regarding rights that are subject to a statutory license are influenced by the presence of statutory compulsory rates and/or the prospect of a future rate proceeding. 4/4/17 Tr. 4591 (Eisenach) (''The underlying problem with looking at an agreement negotiated under the shadow of a license'' is that [i]t shifts bargaining power from the compelled party to the uncompelled party by the very nature of the exercise.'').[293]

Given these limitations, Dr. Eisenach concluded, as he did with regard to the actual section 115 rates licenses, that ''[i]n my opinion, the evidence presented . . . indicates that the relative valuation ratios implied by the . . . negotiations under [the statutory] shadow—ranging from 4.2:1 [23.8%%] to 4.76:1[21%]—represent an *upper bound on the relative market valuations of the sound recording and musical works rights.*'' Eisenach WDT ¶ 92 (emphasis added).

**iii. Synchronization Agreements**

Synchronization (Synch) Agreements are license contracts between audio-video producers, such as movie and television producers, with, respectively, music publishers and record companies, allowing for the use, respectively, of the musical works and the sound recordings in ''timed synchronization'' with the movie or television episode. *See generally* D. Passman, *All you Need to Know about the Music Business* 265 (9th ed. 2015). Dr. Eisenach found these Synch Agreements to be a mixed bag in terms of their value as a benchmark. On the one hand, he recognized that the licenses they conveyed ''do not apply to music streaming services as such'' but, on the other hand, they ''are negotiated completely outside the shadow of the

[289] Lower percentages apply if the record companies' revenue includes revenue to be ''passed through'' by them to pay mechanical license royalties. However, according to Dr. Eisenach, such ''pass throughs'' are not typical. *Id.* ¶ 82 n.67.

[290] Spotify was launched in the United States in the summer of 2011. 3/20/17 Tr.1778 (Page).

[291] I discuss the ''shadow'' argument *supra.*

[292] [REDACTED]; 4/7/2017 Tr. 5509 (Marx) (indicating most recent sound recording royalty payments equaled [REDACTED] % of revenue); Marx WDT ¶ 62 (''In 2015, Spotify paid [REDACTED] % of its US gross revenue for sound recording royalties based on its negotiated rates with record labels summarizing Spotify's rates under various agreements); *see generally* SJPFF ¶ 87 ([REDACTED]).

[293] Again, I discussed the issue of the ''shadow'' of the statutory license *supra.* Suffice it to note here that the ''shadow'' of the statutory license does not ''shift'' bargaining power so much as it eliminates *unequal* bargaining power. Although the interactive services have the legal right to refuse to license at rates set by the Judges (the legal compulsion operates only on the licensors), such refusal of the services to obtain licenses would shut them out of the interactive streaming market in which they have made substantial investments (unless they attempted to engage in piracy which certainly would be quickly shut down). So, it would be absurd for the services not to license at rates set in a section 115 proceeding. And, if they did so refuse, Copyright Owners could then attempt to move the listeners of the erstwhile interactive streaming service to other distribution channels such as purchased downloads and physical products, which they claim are sufficiently profitable for them and, they claim, have been cannibalized by interactive streaming. Or, as Copyright Owners indicate (as discussed *supra*), under the bargaining room approach, if the statutory rate was set too high for some services, Copyright Owners could negotiate lower rates, *free* of the statutory ''reasonableness'' requirement, *without regard* to the four itemized objective in section 801(b)(1), and with the complementary oligopoly *power to* ''*hold out*'' *and* ''*walk away, or to threaten to do so,* to obtain a higher rate than would be set under the statute.

compulsory license. . . . '' *Id.* ¶ 93. Dr. Eisenach notes, from his review of other testimony and an industry treatise, that these freely negotiated market agreements grant the musical composition royalty payments equal to the corresponding royalty paid for the sound recording,'' *id.* ¶ ¶ 94–95 & nn.87, 88, which is the equivalent of a 1:1 sound recording:musical works ratio.[294]

Dr. Eisenach finds this 1:1 relationship to be important benchmark evidence, concluding as follows:

> The synch and micro-sync examples confirm that in circumstances in which licensees require both sound recording and musical composition copyrights in order to offer their service, and where that service is not entitled to a compulsory license for either right, the sound recording rights and the musical composition rights are in many cases equally valued, that is, the ratio of the two values is 1:1.

Id. ¶ 98.

### iv. YouTube Agreements

Dr. Eisenach also examined licenses between: (1) YouTube (owned by Google) and record companies; and (2) YouTube and music publishers, to determine their potential usefulness as benchmarks. [REDACTED]. For these reasons, Dr. Eisenach concluded that for purposes of assessing the relative value of the sound recording and musical works rights, the YouTube agreements represent reasonably comparable benchmarks. *Id.*

In his original Written Direct Testimony, Dr. Eisenach relied upon seven agreements between YouTube and several music publishers pertaining to [REDACTED]. *Id.* ¶ 101 n.93. [REDACTED]. However, with regard to the revenue received by the record companies, Dr. Eisenach could only speculate based on public reports as to the percent of revenue received by the record companies for the sound recordings embedded in the posted YouTube videos. *Id.* ¶ 102. Thus, he was unable to make an informed argument in his *original* written testimony regarding the ratio of sound recording royalties:music publisher royalties in his YouTube [REDACTED].

However, after the Judges compelled Google to produce in discovery copies of the YouTube agreements with the record companies, Dr. Eisenach filed (with the Judges' approval) Supplemental Written Rebuttal Testimony (SWRT) addressing these agreements. In that testimony, Dr. Eisenach examined [REDACTED]. Eisenach SWRT ¶ 6, and n. 5. Dr. Eisenach identified nine of these licenses specifically in his SWRT, and noted that YouTube paid to [REDACTED]—which Dr. Eisenach found to be the comparable YouTube category—whereas [REDACTED]. *Id.* and Table 1 therein.

As Dr. Eisenach accurately calculated, the [REDACTED] revenue split reflects a ratio of [REDACTED], (a musical works rate equal to [REDACTED] % of the sound recording rate), whereas the [REDACTED] revenue split reflects a ratio of [REDACTED] (a musical works rate equal to [REDACTED] % of the sound recording rate).[295]

### v. The Pandora ''Opt-Out'' Deals

Dr. Eisenach also examined certain direct licensing agreements entered into between Pandora and major music publishers covering the period from 2012 through 2018, to determine whether they constituted useful benchmarks in this proceeding. *Id.* ¶ 103. Pandora had negotiated these direct agreements with major publishers for musical works rights after certain publishers had decided to ''opt-out,'' *i.e.,* to withdraw their digital music performance rights from PROs, and asserted the right to negotiate directly with a digital streaming service. As Dr. Eisenach acknowledges, the music publishers' legal right to withdraw these rights remained uncertain during an extended period. Pandora thus negotiated several such ''Opt-Out'' Agreements with an understanding that the rates contained in those direct agreements might not be subject to rate court review.

Given this unique circumstance, and given that the markets and parties involved in the Pandora Opt-Out agreements are somewhat comparable to the markets and parties at issue in this proceeding,[296] Dr. Eisenach concluded that *these agreements provided* ''significant insight into the relative value of the sound recording and musical works rights in this proceeding.'' *Id.* (emphasis added).

Dr. Eisenach compared the musical works rates in these ''Opt-Out'' agreements with the sound recording royalty rates paid by Pandora, which he obtained from the revenue disclosures in Pandora's Form 10K filed with the SEC that provided royalties (''Content Costs'') as a percent of revenue, and he also relied on data contained in prior rate court decisions. Eisenach WDT ¶ 125 & Table 6. With this data, he calculated that the ratio of sound recording: musical works royalties in existing agreements was [REDACTED] for 2018, *i.e.,* the musical works rate equaled [REDACTED]% of sound recording royalties. This [REDACTED]% ratio would correspond to a mechanical rate of [REDACTED]%, assuming, *arguendo,* the sound recording rate is [REDACTED]%, or [REDACTED]% if the sound recording rate is [REDACTED]%.

Dr. Eisenach also made a forecast, by which he linked the passage of time to an assumption that, after the rate court proceedings concluded, the parties, without any further legal uncertainty, would permanently be ''permitted to negotiate freely outside of the control of the rate courts.'' He made this estimation and forecast through a temporal linear regression, extrapolating from the prior [REDACTED] in these Pandora ''opt out'' musical works rates. *See* Eisenach WDT ¶ 129. Dr. Eisenach's linear regression further [REDACTED] the ratio to [REDACTED], which would be equivalent to [REDACTED] the musical works rate, as a percentage of sound recording royalties, from the [REDACTED]% noted above for actual agreements in force in 2018 to [REDACTED]%. almost a [REDACTED] based on the extrapolation alone. *Id.* ¶ ¶ 104; 128 & Table 8, Fig. 13. (This [REDACTED]% ratio would correspond to a musical works rate of [REDACTED]%. assuming the sound recording rate is [REDACTED]% and [REDACTED]% if the sound recording rate was [REDACTED]%.)

### d. Dr. Eisenach's Two Methods for Estimating the Mechanical Rate

Having calculated these five benchmarks, Dr. Eisenach applied them in two separate methods to estimate the mechanical rate to be adopted in this proceeding.

### i. Method #1

Dr. Eisenach's Method #1 for estimating the mechanical rate is based on the following premises:

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[294] Dr. Eisenach finds this 1:1 ratio to be present in the two types of Synch Agreements he identified. One version represents an agreement relating to a specific musical work and sound recording combination. The other version, a ''Micro-Synch'' Agreement, which he describes as ''essentially 'blanket' synch licenses, in that the license grants the right to synchronize not just one particular song . . . but any song in the publisher's catalog (or a significant portion thereof). . . .'' Eisenach WDT ¶ 96.

[295] Although Dr. Eisenach does not emphasize the following point, the actual percentages of revenue reflect that musical works royalties constitute only [REDACTED]% of total revenues in these YouTube agreements, [REDACTED]. Also, these data indicate that YouTube, as licensee, retains [REDACTED]% to [REDACTED]% of the total revenue attributable to these benchmark agreements, [REDACTED].

[296] Pandora was only a noninteractive service at that time, and only paid the performance right royalty, not the mechanical right royalty, for the right to use musical works. Because the parties agree that the performance right and the mechanical right are perfect complements, Pandora's payments for the performance right are relevant and probative.

1.The sound recording royalty paid by *interactive* streaming services is unregulated and thus negotiated in the marketplace. Eisenach WDT ¶ 16.

2.The sound recording royalty paid by noninteractive services is regulated, but Dr, Eisenach find the royalties set by the Judges in *Web III* to reflect a market rate. 4/4/17 Tr. 4643 (Eisenach); *see also* Eisenach WDT ¶ 136 and n.123.

3. The *interactive* streaming services require a mechanical license (the license at issue in this proceeding), whereas the *noninteractive* services are not required to obtain a mechanical licenses.

4. According to Dr. Eisenach, the difference between the rates paid by interactive services and noninteractive services for their respective sound recording licenses equals the value of the remaining license, *i.e.,* the mechanical license. *Id.* ¶ 137 (''[T]he difference between these two rights is akin to a 'mechanical' right for sound recordings, directly paralleling the mechanical right for musical works in this proceeding.'').

5.The mechanical rate implied by this difference in sound recording rates must be ''adjust[ed] for the relative value of sound recordings [to] musical works'' (as discussed *supra*). *Id.* ¶ 140.

Dr. Eisenach combines these steps and expresses his Method #1 in the form of the following algebraic equation:

$MR_{MW} = (SR_{IS} - SR_{NIS})/RV_{SR/MW}$,

*where*

$MR_{MW}$ = Mechanical Rate for Musical Works
$SR_{IS}$ = Sound Recording Rate for Interactive Streaming (All In)
$SR_{NIS}$ = Sound Recording Rate for Non-Interactive Streaming (Performance Only)
$RV_{SR/MW}$ = Relative Value of Sound Recording to Musical Works Rights.

Eisenach WDT ¶ 140.

Dr. Eisenach determined the per play rate paid by interactive services by identifying certain services, but [REDACTED], and ''tally[ing] the total payments . . . and divid[ing] by the total number of interactive streams the service reports.'' *Id.* ¶ 148. The average sound recording per play royalty calculated by Dr. Eisenach was $[REDACTED] ([REDACTED]). *Id.* Table 11.

Dr. Eisenach estimated the rate paid by noninteractive services for sound recordings at $0.0020 per play, or $0.20 per 100 plays. He made this estimate by taking note of the various rates paid in 2015 pursuant to the Judges' *Web III* Determination and pursuant to the pureplay rates paid under an earlier settlement. *Id.* ¶ 136 & n.123. However, he candidly acknowledged that he found it ''not possible to know the average amount paid by non-interactive webcasters,'' and he acknowledged that the subsequent *Web IV* Determination had superseded those noninteractive sound recording rates. *Id.* at n. 123.

His final inputs, discussed *supr*a, are the several benchmark ratios of sound recording: musical works royalties in the markets that he had selected.

After Dr. Eisenach inserted the foregoing data into the algebraic expression set forth above, he presented his data in the following tabular form:

MUSICAL WORKS MECHANICAL PER 100 PLAYS RATE CALCULATION

[Method 1]

| (1)<br>$SR_{IS}$ per 100 | (2)<br>$SR_{NIS}$ per 100 | (3)<br>Difference | (4)<br>$RV_{SR/MW}$ | (5)<br>$MR_{MW}$ per 100 |
|---|---|---|---|---|
| [REDACTED] | $0.20 | [REDACTED] | 1:1 | [REDACTED] |
| [REDACTED] | 0.20 | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | 0.20 | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | 0.20 | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | 0.20 | [REDACTED] | 4.76:1 | [REDACTED] |

*See id.* Table 12.[297] Thus, applying his five potential benchmark ratios, Dr. Eisenach determined that the mechanical works royalty rate to be set in this proceeding ranged from $[REDACTED] per play to $[REDACTED] per play (dividing the figure in column (5) by 100 to reduce the rate from ''per 100'' to ''per play'').

**ii. Method #2**

Dr. Eisenach describes his Method #2 as an alternative method of deriving a market-derived mechanical royalty. His Method #2 ''derive[s] an all-in musical works value based on the relative value of sound recordings to musical works and then remove[s] the amount of public performance rights paid for musical works, leaving just the mechanical-only rate.'' *Id.* ¶ 142. The algebraic expression for Method #2 is as follows:

$MR_{MW} = (SR_{IS}/RV_{SR/MW}) - PR_{MW}$,

*where* PRMW is the public performance royalty rate for musical works, and the other variables are as defined and described in Method #1.

*Id.*

Dr. Eisenach calculates $PR_{MW}$, as an average of $[REDACTED] per 100 plays for the licensees that he included in his data analysis. *Id.* ¶ 156, Table 13. Applying all the inputs across the various benchmark ratios, the results from Dr. Eisenach's Method #2 can also be depicted in tabular form, as set forth below:

MUSICAL WORKS MECHANICAL PER 100 PLAYS RATE CALCULATION

[Method 2]

| (1)<br>$SR_{IS}$ | (2)<br>$RV_{SR/MW}$ | (3) = (2) [298] × (1)<br>Ratio Adj. | (4)<br>(Avg.) $PR_{MW}$ | (5)<br>$MR_{MW}$ |
|---|---|---|---|---|
| [REDACTED] | 1:1 | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |

[297] Dr. Eisenach testified that [REDACTED].

MUSICAL WORKS MECHANICAL PER 100 PLAYS RATE CALCULATION—Continued

[Method 2]

| (1)<br>$SR_{IS}$ | (2)<br>$RV_{SR/MW}$ | (3) = (2)[298] × (1)<br>Ratio Adj. | (4)<br>(Avg.) $PR_{MW}$ | (5)<br>$MR_{MW}$ |
|---|---|---|---|---|
| [REDACTED] | 4.76:1 | [REDACTED] | [REDACTED] | [REDACTED] |

*See id.,* Table 14.

In sum, after applying all of his potential benchmarks in both of his methods, Dr. Eisenach opined that ''the YouTube and Pandora [Opt Out] agreements represent the most comparable and reliable benchmarks, implying ratios of [REDACTED] and [REDACTED], respectively, with a mid-point of [REDACTED].'' *Id.* ¶ 130 (I note that converting these end-points and mid-point of his range to TCC percentages results in a range from [REDACTED]% to [REDACTED]% and a mid-point of [REDACTED]%.)[299]

**e. Criticisms and Analysis of Dr. Eisenach's Benchmark Methods**

**i. Dr. Eisenach's Ratio of Sound Recordings: Musical Works**

Dr. Eisenach's attempt to identify comparable benchmarks and corresponding ratios of sound recording rates to musical works rates appears to me to be a reasonable first step in seeking to identify usable benchmarks. That is, I find his basic conceptual approach—relying on empirics over abstract theory, *viz.,* assuming that a tightly clustered set of ratios across several markets and discerning a central tendency from among them—could aid in the identification of the statutory rates. (As noted *supra,* Dr. Eisenach eschewed unnecessary ''assumptions, complexities and uncertainties associated with theoretical debates'' as to why the particular existing market ratios existed. *Id.* ¶ 79.) In this regard, I understand that Dr. Eisenach was following a well-acknowledged principle of economic analysis, articulated by the Nobel laureate economist Milton Friedman, who famously eschewed excessive theorizing that failed to match the predictive power of empirical analysis. *See* M. Friedman, *The Methodology of Positive Economics,* reprinted in D. Hausman, *The Philosophy of Economics* at 145, 148–149 (3d ed. 2008).

However, the data available to Dr. Eisenach did not demonstrate a sufficient cluster of similar ratios to establish a predictive ratio across the data set. That is, the problem does not lie in the analysis, but rather in the implications from the data regarding ratios of sound recording royalties to musical works royalties. The Services make this very criticism, noting the instability of the ratio across the several markets in which Dr. Eisenach identified potential benchmarks. *See* SJRPFF–CO at 182 (and record citations therein). Apple finds that the wide range of ratios is unsurprising, because Dr. Eisenach's benchmarks do not relate to the same products and same uses of the two rights. Indeed, Apple's [REDACTED], confirming, according to Apple, that there is no fundamental market ratio that can be applied in this proceeding. Dorn WRT ¶ ¶ 6, 24, 28–29.

To be sure, this point does not go unnoticed by Dr. Eisenach, who focuses more on the royalty ratios arising from two potential benchmarks in the middle of his range—the Pandora ''Opt-Out'' agreements and the YouTube Agreements, *discussed infra.*

The Services assert an additional and fundamental criticism of Dr. Eisenach's approach. They note that his use of sound recording royalties paid by interactive services embeds within his analysis the inefficiently high rates that arise in that unregulated market through the complementary oligopoly structure of the sound recording industry and the Cournot Complements inefficiencies that arise in such a market. *See* Katz CWRT ¶ 56; Marx WRT ¶ ¶ 137–141. I agree with this criticism. Indeed, the Judges explained at length in *Web IV* how the complementary oligopoly nature of the sound recording market compromises the value of rates set therein as useful benchmarks for a market that is ''effectively competitive.''[300] In *Web IV,* the Judges were provided with evidence of the ability of noninteractive services to steer some performances toward recordings licensed by record companies that agreed to lower rates in exchange for increased plays. Here, the Judges were not presented with such evidence, likely because an interactive streaming service needs to play any particular song whenever the listener seeks to access that song (that is the essence of an *interactive* service compared with a *noninteractive* service). Thus, the Judges have no direct evidence sufficient to apply a discount on the interactive sound recording rate to adjust that potential benchmark in order to fashion an effectively competitive rate.[301]

[298] The ratio in column (2) is converted into its reciprocal percentage and the percentage is multiplied by the corresponding figure in column (1). For example, in the third row, the [REDACTED] ratio equals [REDACTED]%. When $[REDACTED] is multiplied by [REDACTED], the product is $[REDACTED] (rounded).

[299] Dr. Eisenach found these results to confirm the reasonableness of Copyright Owners' per play rate proposal. However, because I reject a per-play rate structure, that point is not relevant to my Dissent. I further note that Dr. Eisenach also calculates a per user rate, using his Method #2. As he explains, ''this is accomplished by calculating all-in publisher royalties on a per user basis and subtracting the average effective per-user performance royalties to publishers, leaving an appropriate rate for mechanical royalties.'' *Id.* ¶ 159. He finds that the sound recording rate per user is $[REDACTED] (the per user analog to [REDACTED] per 100 plays in his per play analysis). Applying the same ratios and utilizing similar market data as in his per play approach, Dr. Eisenach concludes that a ''mechanical rate of between $[REDACTED] and $[REDACTED] per user reflects the range of relative values for sound recordings and musical works . . . .'' *Id.* ¶ 165. Finally, he notes that, at the [REDACTED] ratio (his mid-point of the YouTube and Pandora benchmarks), the ''mechanical only'' rate would be $[REDACTED] per user (even greater than the $1.06 per user rate proposed by Copyright Owners.) *Id.* Because I do not agree that Copyright Owners' per-user proposal is appropriate (for the reasons discussed *supra*), this asserted confirmation of the reasonableness of Copyright Owners' per-user proposal is unhelpful in the context of this Dissent.

[300] In *Web IV,* the Judges noted that, even in the willing buyer/willing seller context of 17 U.S.C. 114(f)(2(B), all relevant authority required that those rates be reasonable, that is, they must reflect a market that is ''effectively competitive'' (*i.e.,* ''workably'' competitive, the economic analog to ''effectively'' competitive.). *See Web IV, supra,* at 26331–34 (noting the legal bases for an equivalence between effectively competitive and reasonable rates). (However, the rates in this proceeding are further subject to potential adjustment by application of the four itemized factors in section 801(b)(1).). As the Judges noted in *Web IV,* ''[a]n effectively competitive market is one in which supercompetitive prices or below-market prices cannot be extracted by sellers or buyers . . . .'' *Id.* at 26331 (citation omitted). Because Dr. Eisenach's approach intentionally incorporates sound recording market-based royalty rates into his ratios, those rates and the ratios in which they are inputs must be reduced to eliminate the supercompetitive effect of complementary oligopoly that is inconsistent with effective competition.

[301] Dr. Eisenach suggests that the entry of large ''ecosystem'' firms, Amazon, Apple and Google into the interactive streaming market has tended to add ''bargaining power'' to the licensee side of the

Continued

Thus, the sound recording royalties relied upon by Dr. Eisenach likely are too high and would need to be adjusted to reflect reasonable rates derived from a market that is effectively competitive. However, because there is no record evidence in this proceeding allowing for an estimate of the adjustment, I can find only that Dr. Eisenach's ratios are too high to the extent they incorporate the royalty rates derived from the sound recording market.

**ii. Dr. Eisenach's Specific Benchmarks**

**Section 115 Benchmark**

The Services assert that Dr. Eisenach's calculation of a section 115 ''valuation ratio'' of 4.76:1 is incomplete, because he limited this statutory ratio to the 21% and 22% TCC prongs. They note that under the percentage-of-revenue prong of section 115 (10.5%), this statutorily-derived ratio would have ranged between 5:1 and 6:1, *see* 4/5/17 Tr. 5152 (Leonard), implying a musical works rate equal to only 16.67% to 20% of sound recording royalty rates. I agree that Dr. Eisenach's statutory benchmarks would have been more comprehensive if he had included the ''valuation ratios'' derived from this headline prong of the present royalty rate structure. However, the Services' focus on that lower *implied* TCC fails to recognize the greater-of rate structure (with a lesser-of second prong) to which the parties agree. The purpose of the *explicit* TCC levels was that they could trigger if greater than the 10.5% rate and the implicit TCC that could be derived from that rate. Accordingly, I find that the fact that the existing rate structure, on which the Services rely in this proceeding, includes the potential use of the 21% and 22% prongs, demonstrates the usefulness of this benchmark as a representation of a rate that the licensors have agreed to accept, given the provisions of section 115.

**Direct Licenses**

The Services disagree with Dr. Eisenach's minimization of the relevance of this benchmark category. They argue that the direct licenses between interactive services and music publishers ''are by far the most directly apposite benchmarks used in Dr. Eisenach's analysis,'' because they, like the section 115 rates and terms themselves, possess the characteristics of a useful benchmark in that they are: (1) voluntary; (2) concern the same licensors/publisher; (3) negotiated in the same market; and (4) pertain to the same rights. *See* Katz WDT ¶ ¶ 97–113; Leonard AWDT ¶ ¶ 51–76.

I find that direct licenses that meet the foregoing criteria are at as least as useful as the section 115 benchmark itself, provided those licenses do not include additional rights whose values have not been adequately isolated from the particular mechanical license at issue in this proceeding.[302] The so-called ''shadow'' of section 115 provides a default rate for the licensing parties, so direct licenses that deviate in some manner from the rates in the statutory license reveal a preference for other rates and terms that, at least marginally, are below the statutory rate. (If in the direct negotiations the licensors insisted on rates above the statutory rates, a licensee would simply reject the demand and default to the statutory rate.) Thus, as the services note, these benchmarks are useful, because ''these agreements . . . were voluntarily entered both in 2008 and 2012, by the very same publishers in the same markets and for the same rights . . . .'' SJPFF ¶ 261 (and record citations therein). More generally, as described *supra,* I find that the so-called ''shadow'' of the statutory license on a benchmark not only does not disqualify that benchmark as useful evidence, but rather serves to eliminate licensor ''hold out'' power, making the resulting rate more reasonable and more reflective of an effectively competitive rate

**Synchronization Licenses**

The Services also take issue with Dr. Eisenach's inclusion of synchronization licenses in his collection of benchmarks. *See, e.g.,* Leonard WRT ¶ ¶ 37–40 (testifying that synchronization licenses are not comparable for interactive streaming licenses because synchronization differs in important economic respects from streaming); Hubbard WRT ¶ ¶ 6.31–6.32 (testifying on various ''economic characteristics of synch licenses, that render the ratio between sound recording royalties and musical works royalties different between synch and interactive streaming services''); Marx WRT ¶ ¶ 148–151 (''Synch royalty rates are a poor benchmark for streaming royalty rates''). Indeed, even Dr. Eisenach acknowledged that, at best, the low ratio in the synch licenses indicates an unusually high musical works royalty rate among his collection of benchmarks. 4/4/17 Tr. 4671, 4799 (Eisenach); Eisenach WDT App. A–9.

In a prior proceeding, the Judges rejected the synch license benchmark as useful ''[b]ecause of the large degree of its incomparability.'' *See Phonorecords I,* 74 FR at 4519. I find that nothing in the present record supports a departure from that prior finding. The lack of comparability remains present because the synchronization market differs in important economic respects from the streaming market. *See* Leonard WRT ¶ 39. Because synch rights pertain to media such as music used in films or in television episodes,[303] the historically equal valuation of publishing rights and sound recording rights arises from the particular conditions faced in those industries. *Id.* Movie and television producers may have a certain musical work in mind as a good fit for a particular scene in the film. *Id.* However, these producers have the option of making their own sound recording of that musical work, and for this reason, ''cover'' songs are quite common in films. *Id.; see also* Marx WRT ¶ 149 (''Both film and television production companies have the option of recording their own versions of songs, rather than paying royalties to use a pre-recorded song. . . . . This option gives the users of synch rights, such as movie producers, more bargaining power relative to the labels than would be the case with streaming services.''). Thus, the contribution to value of the sound recording is less vis-à-vis the musical work in the synch market. Leonard WRT ¶ 39.

Additionally, in the case of synchronization rights, the marketplace for sound recording rights is more competitive than other music licensing contexts because individual sound

market, obviating any concern over undue licensor power. Eisenach WRT ¶ 77. However, as indicated by the Shapley value analyses of *Copyright Owners'* other economic expert witnesses, Professors Gans and Watt, bargaining power is a function of how many participants exist on one side of the market versus the other. *See* Gans WRT ¶ 55 (noting, *without making any exception for these large entities,* that ''[s]ervices are substitutes for one another, providing rightsholders with a wide array of choices in their licensing decisions [and] this competition reduces individual services' bargaining power.''); Watt WRT ¶ 25 (''[T]he different interactive streaming companies—Spotify, Apple Music, Rhapsody/Napster, Google Play Music, Amazon, etc.—do all compete (and rather fiercely) among themselves, offering very (perhaps perfectly) substitutable services.''). That is, despite the overall size of Apple, Amazon and Google, in a market transaction, all licensors providing complementary ''must have'' inputs will have a bargaining advantage, and they can refuse to license even to these large entities if the latter insist on too low a royalty, licensing instead to other interactive streaming services who can satisfy downstream market demand. In this regard, there is no evidence that [REDACTED].

[302] See the discussion *infra* regarding the importance of this qualifier in connection with Pandora's Direct Licenses.

[303] The Copyright Owners also rely on blanket (''microsynch'') licenses by which publishers grant their entire catalogs for use in synchronized audio-video productions, and they also rely on synch licenses for mobile and video game applications. The Judges' critique of synch licenses as benchmarks is equally applicable to these licenses.

recordings (and thus the musical works within them) compete against one another for inclusion in the final product (*e.g.,* a movie or television episode). By contrast, in the interactive streaming market, services must build a catalog of sound recordings and their included musical works, so that many works can be streamed to listeners. *Id.* That is, in the interactive streaming market, the sound recordings (and their embodied musical works) are ''must have'' complements, not in competition with each other. However, in the synch market the potential sound recordings of any given musical work identified by the movie or television producer is a substitute good, in competition with any other existing or future cover sound recording of the same musical work for inclusion in the movie or television show.

**YouTube Agreements**

I agree with Copyright Owners that YouTube is a competitor vis-a-vis the interactive streaming services. Indeed, the Services acknowledge this point. [REDACTED]. Page WDT ¶ ¶ 47, 53, 55; *see also* (Eisenach) WRT ¶ 59. In like fashion, Professor Marx testified that [REDACTED]. Marx WDT ¶ 44 n.54. Accordingly, at least one form of YouTube Agreement would likely be somewhat comparable to the interactive streaming market.

As noted *supra,* Dr. Eisenach selected for input into his ratio the YouTube agreements and rates pertaining to [REDACTED]. *See* SJRPFF–CO at 187–89 (and record citations therein).

I agree that the inclusion of a video component in the YouTube product renders less useful as a benchmark the agreements relating to ''User Videos with Commercial Sound Recordings.'' Further, as Dr. Eisenach acknowledges, these YouTube audio/video combinations also provide for synchronization rights, *see* Eisenach WDT ¶ 100, and this addition of yet another right in the licenses further muddies the comparability of a YouTube benchmark.

The Services further maintain that—assuming *arguendo* any YouTube licenses are appropriate benchmarks—Dr. Eisenach should have relied on a different category of YouTube licenses for his benchmark analysis. Specifically, they maintain that the more appropriate YouTube benchmark ratio would compare the contractual provisions between YouTube and publishers, and YouTube and record companies, for [REDACTED].

I agree with the Services in this regard. [REDACTED].[304]

Under the [REDACTED] contract provisions (*i.e.,* the [REDACTED] provisions) governing YouTube's agreements with [REDACTED]. *See* Professor Katz's Supplemental Written Rebuttal (Katz SWRT) ¶ ¶ 13(b) n.26 and 13(e) n. 29 (and contracts referenced therein). [REDACTED], the sound recording copyright owner receives a royalty of [REDACTED]% of revenue, compared with the [REDACTED] received by music publishers. *Id.* ¶ ¶ 13(h) n. 32 and (k) n.35 (and contracts referenced therein).

Thus, under the [REDACTED] deals, the royalty ratio is [REDACTED], which equals 4.76:1. In turn, that ratio implies a TCC musical works rate of [REDACTED]%. Under the [REDACTED] deals, the royalty ratio is [REDACTED], which equals [REDACTED], which implies a TCC musical works rate of [REDACTED]%. I find that these ratios and implied percentages derived from YouTube's [REDACTED] royalty rates to be usable benchmarks in this proceeding.

**Pandora ''Opt-Out'' Agreements**

Together with his YouTube benchmark, Dr. Eisenach finds the Pandora ''Opt-Out'' agreements to be the most useful among the several potential benchmarks he examined. I agree with Dr. Eisenach that the Pandora ''Opt-Out'' agreements have a degree of comparability sufficient to render them usable as benchmarks.

However, I do not agree with Dr. Eisenach's attempt to extrapolate into the future from the actual rates in those Opt-Out Agreements. Rather, I find that the [REDACTED] ratio that Dr. Eisenach identified for the year 2018 derived from existing agreements is the most useful benchmark derived from the ''Opt-Out'' data. *See* Eisenach WDT ¶ 104. The Services concur with Dr. Eisenach with regard to the existence of this [REDACTED] ratio, and they further note that Pandora's most recent direct license agreements during the ''Opt-Out'' period with the publishers (who control many of the works underlying sound recordings performed by Pandora) provide that publisher royalties will be determined as [REDACTED].[305] Specifically, these agreements resulted in a shift of the sound recording: musical works ratio to [REDACTED], implying a musical works TCC percentage of [REDACTED]%. *See* Katz CWRT ¶ ¶ 101–104; Herring WRT ¶ ¶ 28–29.

I reject Dr. Eisenach's identification of a trend in the [REDACTED]. His change in the ratio to [REDACTED] was driven by expectations regarding the likelihood of an uncertain change in the legal landscape regarding publisher withdrawals from performing rights organizations. However, changes in such uncertainties are not well-captured by mapping them over a time horizon. Moreover, as the Services note, and as Dr. Eisenach concurs, even assuming *arguendo* such a change in relative uncertainty could be captured in a regression, other regression forms, such as a quadratic form, could have been used to demonstrate not a [REDACTED], but rather a return of the ratio to its prior level (an equally plausible future event). *See* 4/5/17 Tr. 495963 (Katz); Katz CWRT ¶ ¶ 104–107, Table 1,F; 4/4/17 Tr. 4807–08 (Eisenach) (noting his linear form of regression was not ''material'').

Moreover, the assumption behind Dr. Eisenach's regression was not borne out. In 2015, the Second Circuit Court of Appeals affirmed a 2014 decision by the Southern District of New York, *prohibiting such partial withdrawals. In re Pandora Media, Inc.* v. *ASCAP,* 785 F.3d 73, 77–78 (2d Cir. 2015), *aff'g In re Pandora Media,* 6 F. Supp. 3d 317, 322 (S.D.N.Y. 2014). Subsequently, in August, 2016, the Department of Justice issued a statement announcing that, consistent with these judicial decisions, it would not permit such partial withdrawals under the existing consent decrees. *See* Eisenach WDT ¶ 114 & n. 109 therein. In fact, as indicated *supra,* there were actual Pandora ''Opt-Out'' agreements that set rates through 2018 that established a sound recording:musical works ratio of [REDACTED], that Dr. Eisenach chose to disregard in favor of his extrapolated lower ratio. See Katz CWRT ¶ 103; Herring WRT ¶ 28.

**iii. Dr. Eisenach's Per Play Sound Recording Rate**

I also have difficulty relying on the data set which Dr. Eisenach developed for his estimation of a $[REDACTED] per play sound recording royalty rate, to which he applied the several benchmark ratios. The principal problems with this

[304] I take note of Dr. Eisenach's criticism of the [REDACTED] publishing rates as constrained by the ''shadow'' of the section 115 license. However, as explained elsewhere in this Dissent, I find the ''shadow'' of the section 115 statutory license to be beneficial in establishing rates that reflect the workings of an effectively competitive market.

[305] Pandora's status as a purely noninteractive service prior to 2018 does not impact the relevancy of this benchmark, because: (1) noninteractive and interactive services both pay performance royalties; (2) noninteractive services do not pay mechanical royalties; and (3) the performance license and the mechanical license are perfect complements.

data is that it covered a non-random sample of only approximately 15% of all interactive plays, excluding in particular plays on [REDACTED] ad-supported services and Apple's interactive streaming service. Inclusion of [REDACTED] would have [REDACTED] his per play rate from $[REDACTED] to $[REDACTED] (Inclusion of [REDACTED] would have [REDACTED] the $[REDACTED] estimate to $[REDACTED].) SJRPFF–CO at 158–59 (and record citations therein).

Dr. Eisenach explained that he restricted his data sample purposefully. He decided to omit several sound recording labels because they [REDACTED], which he asserted [REDACTED]. Eisenach WDT ¶ 150. I acknowledge Dr. Eisenach's assertion that this fact *could* have an impact, on the margin, of driving [REDACTED] the royalties paid by [REDACTED] to those labels. However, the evidence does not bear that out, because [REDACTED]. More particularly, the [REDACTED] contract with record labels that Dr. Eisenach reviewed show [REDACTED]. 4/4/17 Tr. 4739–53 (Eisenach); *see also, e.g.* Trial Ex. 2760 ([REDACTED]); Trial Ex. 2765 ([REDACTED]). [REDACTED].

With regard to Dr. Eisenach's specific omission of data from Spotify's ad-supported service, Copyright Owners make additional arguments. They claim that the ad-supported service does not reflect the actual value of the sound recordings, because that tier acts as a funnel to draw listeners to the subscription service. Therefore, Copyright Owners maintain, the ad-supported service is essentially a loss-leader, with the difference between the higher effective per play rates for subscription services and the lower effective per play rates for the ad-supported services more in the nature of a marketing expense that should not be deducted from Dr. Eisenach's royalty calculations. *See* Eisenach WDT ¶ 148 n.127.

However, that analysis omits several important facts. First, as Mr. McCarthy, Spotify's CFO testified, [REDACTED]. 3/21/17 Tr. 2058–59 (McCarthy) ([REDACTED]). Second, he notes that [REDACTED]% of Spotify's paid subscribers in the United States were previously such engaged users of the ad-supported service. McCarthy WRT ¶ 22; *see also* 3/21/17 Tr. 2059 (McCarthy). Third, Mr. McCarthy testified that the ad-supported tier [REDACTED]. *See* 3/21/17 Tr. 2059 (McCarthy) ([REDACTED]).

Notwithstanding the marketing value of the freemium model, it must be remembered that [REDACTED]. *These listeners, and the advertising revenue they generate, are real and reflect the WTP of a large swath of interactive listeners.*[306] *See* Marx WRT ¶ 115–16 & Fig. 9 (''While I agree that one aspect of the ad-supported service is to provide an on-ramp to paid services, it also has another important aspect, namely to serve low WTP customers . . . . Copyright Owners' economists err in not calculating the impact of the Copyright Owners' proposal on ad-supported services. Ad-supported services currently make up [REDACTED] in the industry.'') I agree with this point, and I therefore agree with the Services that Copyright Owners erred in their decision to exclude Spotify data from their analyses.[307]

I also disagree with Copyright Owners' suggestion that the ad-supported service deprives them of higher royalties from subscribers. Although ad-supported services identify future subscribers, until those subscribers are identified, they are not subscribers. In that sense, ad-supported services indeed are marketing tools, *but they do not reduce present royalties because the future subscribers have not yet been identified.* By using ad-supported services, Spotify certainly does avoid hard marketing costs that would be incurred through, for example, paid advertising to convince non-subscribers to subscribe. However, there is no record evidence that this hard cost saving translates directly into lost royalty revenue to Copyright Owners. Apparently, Copyright Owners argue that their loss is in the form of an *opportunity cost,* losing the opportunity to obtain subscription-level royalties from the ad-supported listeners. But if Spotify paid subscription-level royalties for all ad-supported listeners, it would be paying an implicit marketing cost that inefficiently was wasted on the [REDACTED].[308]

In this regard, it is important to remember that, as discussed *supra,* music is an ''experiential'' good. *See Byun, supra,* at 23. Thus, provision of a monetarily ''free-to-the user'' service is a reasonable marketing tool, and the Judges are loath to second-guess the business model incorporating that marketing approach, especially after it has proven successful while still providing royalties to rights owners. *See* Page WDT ¶ 27 (Spotify's freemium model monetizes through subscriptions more successfully than the sale of downloads and CDs, as well as terrestrial radio and, of course, piracy).

**d. Service's Criticisms and Judicial Analysis of Dr. Eisenach's Method #1**

The Services criticize Dr. Eisenach's Method #1 calculation as being based upon the incorrect assumption that the entire difference between interactive and noninteractive rates must be attributed to the mechanical license right. As the Services properly note, there are several reasons, all unrelated to the mechanical right and license, why interactive rates are higher than noninteractive rates for musical works performance rights. Leonard WRT ¶ 55; Katz CWRT ¶ ¶ 117–118; Hubbard WRT ¶ 6.4; 4/5/17 Tr. 4972–74 (Katz). First, Dr. Eisenach's Method #1 did not account for the presence of the ephemeral right in licensing noninteractive streaming (discussed *supra*), which accounts for 5% of the noninteractive rate. 4/4/17 Tr. 4851–52 (Eisenach); *see also* 4/5/17 Tr. 5159–5161 (Leonard) (discussing how Dr. Eisenach's analysis does not consider

[306] In the parlance of platform economics, and as noted *supra,* Spotify's ad-supported service provides a multi-platform approach, in which listeners, advertisers, sound recording rights holders and musical works holders all combine to obtain revenue based on the mutual values each brings to that platform. *See* 3/21/17 Tr. 2013 (Marx).

[307] Copyright Owners belatedly propose that—if the Judges intend to include the Spotify ad-supported service in the rate structure and rate calculations—that they establish (1) *separate rates* for ad-supported services that are not incorporated into the calculation of rates set for other services; and (2) *separate terms* for an ad-supported service that limit the functionality of such a service to avoid potential cannibalization of services paying higher royalties. COPCOL ¶ 228 & n.34. This argument is a tacit acknowledgement by Copyright Owners that a segmented market *may* require a differentiated rate structure (even as they strenuously dispute the appropriateness of such a structure). Such a post-hearing argument is ''too little, too late.'' If Copyright Owners wanted to argue in the alternative in this manner, they needed to do so during the hearing, and support their arguments for limited ad-supported functionality and segmented rates with testimony and evidence. As I noted *supra,* the Judges 'choices were limited to the rate structures proffered by the parties, or reasonably suggested by the evidence; a different structure, if proffered or suggested by the evidence, might have been preferable, but it had to be supported by record evidence. In any event, the rate structure I adopt in this Dissent does not simply average Spotify's lower effective per-unit rate into an overall rate, because the I am adopting a differentiated rate structure that continues to treat the ad-supported market segment separately, reflecting the presence of a market segment with a lower WTP. Startlingly, the majority adopts this reasoning wholesale in the Majority Opinion, *foreclosing Copyright Owners' argument.* So, although the majority agrees that Copyright Owners could not propose a new rate structure post-hearing, the majority gives itself a free pass to do the same, even though the harm to the parties is identical in either case—they are deprived of the opportunity to challenge the post-hearing creation.

[308] Another alternative marketing approach would be the offering of free trial subscriptions. However, there was no testimony as to whether free trials would better monetize listening than the freemium model used by Spotify. In fact, Spotify's CFO, Mr. McCarthy testified that, [REDACTED]. 3/21/17 Tr. 2113–2115 (McCarthy). *See also* COPFF ¶ 369.

the ephemeral right); Leonard WRT ¶ ¶ 55–56. Second, there is a difference in the performance rights royalty rates charged by PROs to interactive and noninteractive services that is not captured by Method #1. *See, e.g., In re Petition of Pandora Media, Inc.,* 6 F. Supp. 3d at 330 (ASCAP charges different royalty rates for performance rights depending on whether the service is non-interactive or interactive). Had Dr. Eisenach considered these factors, he might well have estimated a mechanical rate significantly less than the rates he derived, even using his ''valuation ratios.'' *See* Katz CWRT ¶ 122.

The Services also note the impact in Method #1 of Dr. Eisenach's decision to [REDACTED] from his modeling. As the Services note, adding [REDACTED] to Dr. Eisenach's effective per play rate for sound recording results in a per rate of $[REDACTED]. *See* 4/4/17 Tr. 4771–74 (Eisenach). Further, the Services note that, by introducing the unregulated sound recording rates in his ratio, Dr. Eisenach has imported the complementary oligopoly (Cournot Complements) power associated with those rates, as noted in *Web IV. See* Katz CWRT ¶ 56; Marx WRT ¶ ¶ 137, 141.

Combining all of the foregoing criticisms, the Services conclude as follows:

> If one were to use $[REDACTED] per hundred plays for the sound recording rate ([REDACTED]) (id. at 4771:10–4774:5), reduce that by 12% as the Board did in Web IV for complementary oligopoly power, increase the $0.20 per hundred plays Dr. Eisenach uses for musical works performance rights by 60% to account for the difference in ASCAP rates identified by Judge Cote [in the rate court], and then apply Dr. Eisenach's invalid ''valuation ratio'' of [REDACTED], the result would be $[REDACTED] per hundred plays [$[REDACTED] per play], way below the $0.15 per hundred plays rate [$0.0015 per play] that Dr. Eisenach attempts to validate.

SJPFF ¶ 279 (and record citations therein). Thus, the foregoing criticisms would reduce Copyright Owners' benchmark by 80%.

I agree with the Services that Method #1 does not provide a useful benchmark in this proceeding. As noted *supra,* and most importantly, the absence of interactive streaming data from Spotify is a critical omission. The fact that much of that data relates to ad-supported services with a limited functionality does not justify removing that data from a market analysis, *because that service is a part of the market.* In fact, Copyright Owners argument proves too much. That is, their willingness to distinguish and isolate the Spotify ad-supported service and related data in this manner only underscores the need for a differentiated/price discriminatory rate structure, such as proposed by this Dissent.

Also, I agree that Dr. Eisenach's analysis imports the complementary oligopoly power of the sound recording companies. Although (as also noted *supra*) I do not think that the Judges could simply import the 12% steering adjustment from *Web IV* to calculate this effect (because the 12% was a function of evidence specific to that proceeding), it is clear that any benchmark approach should adjust downward a rate inflated by the presence of complementary oligopoly in the benchmark market.

And to reiterate, although the Services utilize Dr. Eisenach's [REDACTED] ratio (implying a TCC of [REDACTED]%) to illustrate the impact of their other criticisms, I find that ratio to be much lower than what can reasonably be gleaned from Dr. Eisenach's benchmarks. As indicate *supra,* the most usable benchmark information from Dr. Eisenach's approach are the YouTube [REDACTED] ratio, and the Pandora ''Opt-Out'' ratio from actual agreements, which imply a TCC between [REDACTED]% and [REDACTED]%.

**e. Services' Criticisms and Judicial Analysis of Dr. Eisenach's Method #2**

The Services criticize Dr. Eisenach's Method #2 principally for the same reason they criticize his Method #1, *viz.,* his use of a ratio that embodies inapposite sound recording data. They also emphasize the import of his decision to omit Spotify's sound recording data from his Method #2 calculations. At the hearing, Dr. Eisenach acknowledged the significance impact of this omission, but he defended the omission as virtue rather than vice, because of the starkly different manner in which Spotify monetizes its ad-supported service. He testified that, had he incorporated all of Spotify's sound recording data in estimating a current industrywide monthly per user charge, he would have calculated a monthly per user sound recording rate of $[REDACTED] per month, rather than the $[REDACTED] rate he determined when excluding [REDACTED] data. 4/4/17 Tr. 4825–28 (Eisenach).

In addition, the Services assert that Method #2 is faulty because of Dr. Eisenach's use of the rate court performance royalty rates that he subtracts from his ratio-derived musical works rate to identify an implied mechanical works rate. More specifically, the Services assert that Dr. Eisenach's willingness to use the rate courts' performance rates is inconsistent with his broader claim that musical works rates have been artificially reduced below market rates. For example, when identifying benchmarks, Dr. Eisenach relies on the *non-rate court performance rights* paid by Pandora in the Opt-Out agreements precisely because they represent, in his opinion, market-based rates untainted by the depressing effects of the rate court. *See* Eisenach WDT ¶ ¶ 106–110, 4/4/17 Tr. 4805, 4821–23. (Eisenach). According to the Services, to be consistent, Dr. Eisenach should have increased the rate court levels to reflect what he understood to be market rates. Such consistency, they assert, would make the subtracted rate in the Method #2 formula larger, and the difference—which is Dr. Eisenach's mechanical rate—smaller.

Finally, the Services criticize Dr. Eisenach's Method #2 calculations because they exclude not only significant sound recording data, but also the performance royalty data for Amazon, Apple, Google, and Spotify. Accordingly, Method #2 accounts for only 13 percent of total interactive service revenues in 2015. *See* Katz CWRT ¶ 124.

I agree with the Services that Method #2 does not contain sufficient industrywide performance royalty and sound recording data to provide a meaningful analysis for determining a per-user monthly mechanical works royalty. I am also troubled by the apparent inconsistent use of rate court established rates in Method #2, when Dr. Eisenach had indicated in other contexts that rates unshackled from rate court decisions provide a truer indication of market rates.

More broadly, I understand that Dr. Eisenach omitted [REDACTED] because of [REDACTED], which is [REDACTED]. I recognize that combining [REDACTED] user data with other interactive streaming services' data [REDACTED]. *See* CORPFF–JS at pp. 183–184 (noting what Copyright owners describe as ''[t]he profound impropriety of [REDACTED] into Copyright Owners' benchmarking and calculations.)

Once again, though, that seeming anomaly actually underscores why I find the differentiated rate structure in the 2012 benchmark to be appropriate. The royalty rates paid by all services should be reflective of the differentiated WTP of their listeners (for the reasons discussed *supra*). That is, the same reason why Dr. Eisenach elected not to lump Spotify with other services in his calculations incorporated into Copyright

Owners' ''one size fits all'' rate structure. Indeed, the anomalous nature of Spotify's monetization of the downstream market underscores why ''one size *does not* fit all,'' and why the 2012 rate structure therefore is preferable (and why Copyright Owners made the post-hearing argument for a separate rate structure, with separate terms, for ad-supported services, as discussed *supra*).

**f. Conclusion**

For the reasons set forth above, I would not adopt Dr. Eisenach's proposed benchmark rates as the mechanical rates for the upcoming rate period. However, as explained *supra,* I find that the actual Pandora Opt-Out Agreements, the [REDACTED] YouTube Agreements [REDACTED] rates provide useful benchmark information (albeit not the same information that Dr. Eisenach identifies as useful from those agreements). Thus, usable ratios from Dr. Eisenach's analysis consist of the [REDACTED] and [REDACTED] ratios derived from the YouTube [REDACTED] agreements and the [REDACTED] ratio derived from the Pandora Opt-Out Agreements. These ratios, respectively convert to percentages (*i.e.,* a TCC percentages) of [REDACTED]%, [REDACTED]%, and {REDACTED]%. Also useful are the 21%-22% TCC values in the existing rate structure, which, as Dr. Eisenach indicated, [REDACTED]. *See* Eisenach WDT ¶ ¶ 84–92.

**2. The Services' Benchmark Rates [309]**

**a. The Present Section 115 Rates**

The Services do not examine in detail the particular rates within the existing rate structure. Rather, they treat the rates within that structure as benchmarks are generally treated—considerations in arriving at an agreement. Thus, just as Dr. Eisenach did not analyze *why* the rates and ratios on which he relied as benchmarks were set at the levels he identified, or consider the subjective understandings of the parties who negotiated his benchmarks, the Services' economists elect to rely on the 2012 rates as objectively useful evidence of the parties' revealed preferences.[310]

Copyright Owners disagree with this use of the 2012 rate structure. As with regard to the structure of the rates, they take the Services to task for failing to present evidence of the negotiations that led to the prior settlements, including the present 2012 benchmark. They argue that, without such supporting evidence or testimony, the Services cannot provide support for their proposed rates. *See* CORPFF–JS at p. 61 (noting the lack of evidence for the ''computations for different types of potential services'' in the 20212 benchmark).

The Services take a broad approach in their attempt to support the usefulness of the rate levels within the 2012 benchmark. They note that music publishers have consistently realized profits under these rates, including profits from musical works royalties. However, Copyright Owners note that mechanical royalties have not created a profit for Copyright Owners, and the Services' assertion of overall publisher profitability is based on their lumping of performance royalties together with performance royalties. As I have noted *supra,* in considering Professor Zmijewski's analysis, the combination of mechanical and performance royalties earned by the music publishers is the more important metric, because: (1) performance and mechanical royalties are perfect complements; and (2) the mechanical royalty has been calculated in an ''All-In'' fashion, subtracting the performance royalty from the mechanical royalty, which of course has the effect of inflating the performance royalty portion relative to the mechanical royalty portion.

The Services also maintain that they relied on the continuation of the rates that now exist to develop their business models. For example, Pandora, the latest entrant into the interactive streaming market, asserts that its decision to enter this market was based on its assumption that there would be no increase in the mechanical royalty rates. Herring WRT ¶ 3. I categorically reject this argument. The applicable regulations provide that ''[i]n any future proceedings the royalty rates payable for a compulsory license shall be established de novo.'' 37 CFR 385.17; *see also* 37 CFR 385.26 (same). A party may feel confident that past is prologue and the parties will agree to roll over the extant rates for another period; a party could be sanguine as to its ability to make persuasive arguments as to why the rates should remain unchanged; a party might even conclude that the mechanical rate is such a small proportion of the total royalty obligation that its increase would be unlikely to alter long-term business plans. But for sophisticated commercial entities to claim that they *simply assumed* the rates would roll over without the possibility of adjustment strikes me as so absurd and reckless as to raise serious doubts about the credibility of that position.

At least one of the Services, Spotify, further suggests that the present rates should not be increased because an increase in the rates might affect different interactive streaming services in different ways. In particular, there might be a dichotomous effect as between essentially pure play streaming services (such as Spotify and Pandora) and the larger new entrants with a wider commercial ''ecosystem'' (such as Amazon, Apple and Google). As Spotify's CFO testified:

> The Copyright Owners argue that ''a change in market-wide royalty rates such as this would affect all participants in a similar way,'' suggesting that the industry as a whole could increase prices without affecting their relative price points. Rysman WDT ¶ 94. [REDACTED]. See, *e.g.,* Rysman WDT ¶ 29 . . . . [REDACTED].

McCarthy WRT ¶ 38 (emphasis added); *see also* McCarthy WDT ¶ ¶ 50–51 ([REDACTED]); McCarthy WRT ¶ 36 ([REDACTED]).

I construe this argument as an iteration of the ''business model'' argument that the Judges have consistently rejected, *viz.,* that the Judges will not set rates in order to protect any particular streaming service business model. Final Rule and Order, *Digital Performance Right in Sound Recordings and Ephemeral Recordings,* 72 FR 24084, 24088 n.8 (May 1, 2007) (*Web II*). That is, I distinguish between: (1) business models that are necessary reflections of the fundamental nature of market demand, particularly, the varied WTP among listeners; and (2) business models that may simply be unable to meet dynamic competition within the market or a given market segment. If pure play interactive streaming services are unable to match the pricing power of businesses imbued with the self-financing power of a large commercial ecosystem, nothing in section 801(b)(1) permits—let alone requires—that the Judges protect those pure play

[309] The following analysis does not address the direct deals entered into by Pandora, cited by Professor Katz in his testimony. He candidly acknowledged that the probative value of these agreements was weakened by the fact that they included rates for other tiers of service, including noninteractive service, and he had not given consideration to how the bargaining and setting of each rate in each tier might be interrelated. *See* Katz WDT ¶ 105 (''The simultaneous agreement with respect to multiple services can cloud the interpretation of any given number in a contract because the rates are negotiated as a package.''). I agree with Professor Katz and, for this reason, I place no weight on those direct Pandora agreements.

[310] This point is not made to be critical of Dr. Eisenach's approach, but rather to show that the Services' reliance on the 2012 settlement as a benchmark shares this similar analytical characteristic, typical and appropriate for the benchmarking method in general.

interactive streaming services from the forces of *horizontal* competition.[311]

On balance, I do not find that the Services' status quo and business model arguments for maintaining the section 115 rates are themselves persuasive reasons to maintain those rates. If those rates should be maintained, support for such a result would need to be found elsewhere in the record.

**b. The Services' Subpart A Benchmark**

The Services propose the rate set forth in Subpart A as a benchmark for the Subpart B rates to be determined in this proceeding. As noted *supra,* Subpart A reflects the rates paid by record companies, as licensees, to Copyright Owners for the mechanical license, *i.e.,* the right to reproduce musical works in digital or physical formats. The particular Subpart A benchmark rate on which the Services' rely is the existing rate, which the Subpart A participants have also agreed to continue through the forthcoming rate period through the settlement noted *supra.*

In support of this benchmark, the Services emphasize that the total revenue created by the sale of digital phonorecord downloads and CDs is essentially commensurate with the revenues created through interactive streaming, indicative of an equivalent financial importance to publishers when negotiating rates when negotiating rates with licensees in Subparts A and B respectively. *See* 3/20/17 Tr. 1845 (Marx) (''downloads, in particular, are comparable to interactive streaming.''). Also, although the Subpart A rate is the product of a settlement, the Services argue that the rate is a useful benchmark because it reflects both the industry's sense of the market rate and the industry's sense of the how the Judges would apply the section 801(b)(1) considerations to those market rates. 3/15/17 Tr. 1184, 1186 (Leonard); 3/20/17 Tr. 1842–43 (Marx).

In opposition, Copyright Owners argue, for several reasons, that the Subpart A rates are not proper benchmarks. First, they emphasize that revenue from the sale of DPRs and CDs has been declining over the past several years. *See* COPFF ¶¶196, 583, 611, 736 (and record citations therein). Second, they note that, as the Services acknowledge, the parties are not identical; specifically, the licensees in Subpart A are the record companies whereas in Subpart B the licensees are the interactive streaming services. *See, e.g.,* 3/15/17 Tr. 1193 (Leonard). Third, they emphasize that the *existing* Subpart A rate is itself the product of a settlement, rather than a market rate.

More importantly, Copyright Owners also note that the subpart A settlement establishes a *per-unit* royalty rate of $.091 per physical or digital download delivery (with higher per-unit rates for longer songs), rendering that rate inapposite as a benchmark for the Services' present subpart B proposal. In support of the conclusion that this makes for an inapposite comparison, Copyright Owners argue that because the subpart A rate is expressed as a monetary unit price, the Copyright Owners have eliminated the risk that the retailers' downstream pricing decisions will impact Copyright Owners. More specifically, they note that, ''[u]nder the Subpart A rate structure, the label (as licensee) pays the same [penny rate] amount in mechanical royalties *regardless of the price at which the sound recording is ultimately sold* [within the] range of price points for individual tracks in the market ranging from $0.49 to $1.29 and the mechanical penny rate binds regardless of the price of the track. COPFF ¶727 (citing Ramaprasad WDT ¶28 & Table 1).

Of equal importance, Copyright Owners distinguish Subpart A from Subpart B based on the fact that downstream listeners to DPDs and CDs (and any other physical embodiment of a sound recording) become *owners* of the sound recording and the musical work embodied within it, whereas under Subpart B the listeners only obtain *access* to these songs and musical works for as long as they remain subscribers or registered listeners (to a non-subscription service).

In reply to this argument, Dr. Leonard, asserted that the legal ''ownership vs. access'' distinction does not reflect as fundamental an economic difference as might appear on the surface. Leonard WRT ¶27 (''[T]here are certain conceptual similarities between streaming and a download.''). Having paid for a track download, a user can listen to it as often as desired without further charge. Similarly, having paid the subscription fee, a streaming user can listen to a track as often as desired without further charge''); 3/15/17 Tr. 1098, 1113 (Leonard) (''in the case of a PDD, and streaming, in both cases you're getting—it's really about on-demand listening . . . . I think it's . . . a very, very useful benchmark.'').

I disagree with Dr. Leonard, and agree with Copyright Owners that the ''ownership vs. access'' dichotomy diminished the usefulness of the subpart A rate as a benchmark. Although Dr. Leonard is correct in noting that ownership is in essence a more comprehensive and unconditional form of access, a downstream purchaser acquires ownership of only the digital or physical embodiment of a sound recording (and the embodied musical work) in exchange for an up-front charge (the purchase price), and then has unlimited free access to that single sound recording/musical work going forward. By contrast, a subscriber to an interactive streaming service pays an up-front charge (usually monthly), and then likewise has unlimited access to the entire catalog of sound recordings (and the embodied musical works) for each such period.

Thus, the dissimilarities between the products regulated in subpart A and subpart B outweigh their similarities. An interactive streaming service provides an access (option) value to entire repertoires of music. A purchased download or CD provides unlimited access for only a single sound recording/musical work.

In other respects, though, I recognize that the subpart A market and settlement are somewhat comparable to the subpart B market. The licensed right in question is identical—the right to license copies of musical works for listening in a downstream market. Further, the licensors—*i.e.,* the music publishers and songwriters—are identical.[312] Finally, the time period is reasonably recent, and the Copyright Owners have not explained whether or how the particular market forces in the Subpart A market sectors have changed since 2012 to make the rate obsolete.

Notwithstanding these similarities though, I find that the facially different access value in subpart A constitutes a fatal flaw in its usefulness as a benchmark in this proceeding. However, the Services, and Apple, have presented

[311] Moreover, any disruption arising from the disparate impact of a rate increase among interactive streaming services would not constitute ''disruption'' under Factor D of section 801(b)(1), because such disruption would not impact the structure of the industry or generally prevailing industry practices, but rather would impact particular business models. The irrelevancy, for disruption purposes, of a rate increase *under the existing structure* must be distinguished from a rate increase caused, as in the Majority Opinion, by a radical change in the rate structure that cedes control of rates to private third-parties, *i.e.,* the record companies, who have economic interests adverse to both the services and Copyright Owners, as discussed *supra.*

[312] However, the licensees in the benchmark market are not the same. Moreover, as Copyright Owners note, there is an important economic difference in the identities of the licensees. In subpart A, the licensees are record companies, who use the licensed musical works as *inputs* to create a new product, the sound recording. In subpart B, the interactive streaming services use the musical work through their use of the finished product (the sound recording). This basic difference suggests that the different values are a consequence of a difference in kind.

evidence which they assert provides two different ways of rendering subpart A rates compatible. Accordingly, I consider those approaches below.

**c. The Services' and Apple's Subpart A Benchmarking Approaches**

To convert the per-unit rate in subpart A into a subpart B percent-of-revenue rate, the Services and Apple identify several alleged third-party conversion ratios between a given number of interactive streams and a single play of a purchased DPD that they allege are applicable in this proceeding.

Professor Marx first applies a conversion ratio of PDDs to streams of 1:150, which she noted had been established by the RIAA. Second, she (as well as Professor Katz) takes note of an academic study which estimated that, in the marketplace, 137 interactive streams was equivalent to the sale of one DPD. Marx WDT ¶ 108 & n.21 (citing L. Aguiar and J. Waldfogel, *Streaming Reaches Flood Stage: Does Spotify Stimulate or Depress Music Sales?* (working paper, National Bureau of Economic Research, 2015)); Katz WDT ¶ 110 (same). Apple's economic expert, Professor Ramaprasad, also relied on the Aguiar/Waldfogel article to support Apple's benchmark per play proposal. Ramaprasad WDT ¶ 56, n.102.[313]

To apply the 1:150 conversion ratio, Professor Marx first calculated the subpart A mechanical license fee as the weighted average of the PDD/CD mechanical license fee for songs five minutes or less and songs greater than five minutes: $[REDACTED] per copy for the former and $[REDACTED] per minute or a fraction thereof (conservatively assuming that songs longer than five minutes have an average length of eight minutes). Based on this assumption, she estimated a PDD/CD mechanical license fee of $[REDACTED] per song. Marx WDT ¶ 108. Next, Professor Marx obtained a per-play streaming royalty equivalent by dividing the $[REDACTED] per song amount (derived *supra*) by the number of streams, 150, yielding a value for the per-play total streaming royalty of $[REDACTED]. *Id.* ¶ ¶ 109–110. The resulting per-play royalty rate for the sum of mechanical and performance royalty translates to [REDACTED]% of Spotify's revenue. *Id.* ¶ 111. Subtracting out the performance royalty of [REDACTED]% as in an ''All-In'' calculation, she derived a mechanical royalty rate equivalent from Subpart A of approximately [REDACTED]% to [REDACTED]% of revenue. *Id.* ¶ 112, Fig. 22.

Professor Marx engaged in the same calculation methodology when applying the 1:137 conversion ratio from the Aguiar/Waldfogel article, and she determined a percent-of-revenue royalty for Spotify of [REDACTED]% (''All-In''), higher than the [REDACTED]% when applying the 1:150 conversion ratio. *Id.* ¶ 111 n.123.

On behalf of Pandora, Professor Katz used the same 1:150 conversion ratio as Professor Marx. He calculated a mechanical rate implied by the subpart A rate of 4.25%, higher than Professor Marx's implied rate, but still lower than the existing headline rate of 10.5% in subpart B. Katz WDT ¶ 111. On behalf of Apple, Professor Ramaprasad utilizes the 1:150 ratio, which she adopted from Billboard magazine's ''Stream Equivalent Albums'' approach. Ramaprasad WDT ¶ 84. Because Apple has advocated for a per stream rate, her conversion was expressed on a per stream basis, at $0.00061 per stream. Professor Ramaprasad noted that this rate was not only lower than the $0.0015 per stream rate proposed by Copyright Owners, but also significantly lower than Apple's own proposed per-stream rate of $0.00091. Ramaprasad WDT ¶ 86. When Professor Ramaprasad applied the Waldfogel/Aguiar 1:137 ratio, expressed on a per-play basis, she calculated a rate of $0.00066 per-stream for interactive streaming, which she noted also was even lower than the per-stream rate of $0.00091 Apple had proposed.

I do not place any weight on this ''conversion'' approach. Copyright Owners levy numerous criticisms of the ratio approach, and those criticisms, each on its own merit, serve to discredit the ratio approach. First, the Services and Apple simply adopted the equivalence ratios without defining what ''equivalence'' means. For example, the RIAA used the concept to identify albums that were sufficiently popular to garner ''gold'' or ''platinum'' awards. That use, absent other evidence, does not indicate that the conversion ratio is appropriate for rate-setting purposes. *See generally* Rysman WRT ¶ 96. Second, and relatedly, the experts who relied on the Aguiar/Waldfogel article did not verify that the input data used by the authors was appropriate for the purposes for which it has been relied upon in this proceeding. *See* 3/20/17 Tr. 1945–46 (Marx); 3/23/17 Tr. 2789–90 (Ramaprasad). Third, the Aguiar/Waldfogel article appears not to specifically address two issues that would make an equivalency ratio meaningful: (a) what happens to the download behavior of an individual who adopts streaming; and (b) how the availability of streaming alters the consumption of a particular song. *See* Rysman WRT ¶ 97. Fourth, the experts for the Services and Apple ignore that Aguiar and Waldfogel conducted an *additional analysis* described *in the same article* on which they rely. In that second analysis, the authors compared the weekly data from Spotify for the period April to December 2013 with weekly data from Nielson on digital download sales for the same exact songs during the same overlapping time period. That approach, which Aguiar and Waldfogel called their ''matched aggregate sales'' analysis, yielded a ratio of 1:43, implying a much higher mechanical rate for streaming. *See* COPFF ¶ ¶ 663–64 (and record citations therein).

The Services and Apple offer no sufficient evidence to overcome these criticisms of their ''equivalence'' approach for applying the Subpart A rates in this proceeding. Accordingly, I do not rely on such ''equivalence' approaches in this determination.

By contrast, the Services' *second* Subpart A benchmarking approach, utilized by both Professor Marx and Dr. Leonard, is more straightforward, and does not require a conversion of downloads into stream-equivalents. Rather, under this approach, Professor Marx simply divides the effective per-unit download royalty of $[REDACTED] by the average retail price of a download, $1.10, to calculate an ''All-In'' musical works royalty percent of [REDACTED]%. Subtracting Spotify's [REDACTED]% performance rate nets a mechanical works rate of [REDACTED]%. In similar fashion, given an average CD price of $1.24 per song, she finds that the ''All-In'' musical works rate equals [REDACTED]%. Subtracting Spotify's [REDACTED]% performance rate nets an ''effective'' mechanical royalty rate of [REDACTED]% under this approach. Thus, she concludes that the Services' proposal in general, and Spotify's proposal in particular, are conservative and reasonable, because those proposals provide for substantially higher royalty

[313] Professor Ramaprasad also relied on two other equivalency ratios, the first from *Billboard* magazine, and the second from another entity, UK Charts Company (UK Charts). However, she acknowledges that the *Billboard* ratio combines *video* streaming royalty data with *audio* streaming royalty data, which results in an overestimation of the ratio of streams to track sales relative to an audio-stream-only analysis. 3/23/17 Tr. 2760–61 (Ramaprasad). She also acknowledges that UK Charts changed its ratio from 1:100 to 1:150 without explanation, rendering uncertain that purported industry standard. *See* COPFF ¶ 683 (and record citations therein). Also, there was no evidence indicating that streaming and download activity in the United Kingdom would be comparable to U.S. activity.

rates than suggested by this subpart A benchmark analysis. Marx WDT ¶ ¶ 113–114 & Fig. 23.

Dr. Leonard did a similar calculation. He found that, applying the subpart A rates, expressed as a percentage of revenue, interactive streaming services would pay an ''All-In'' rate to Copyright Owners of 8.7% of revenue, based on the average retail price of digital downloads in 2015. Leonard AWDT ¶ 42. Dr. Leonard further calculated that, expressed as a percentage of payments to the record labels (rather than total downstream revenues) the subpart A settlement reflects a payment of 14.2% of ''All-In'' sound recording royalties, when compared to payments to record labels in 2015. Leonard AWDT ¶ 46.

Using updated 2016 data, which lowered the DPD retail price to $.99, Dr. Leonard calculates an ''effective'' percentage royalty rate of 9.6%. 3/15/17 Tr. 1108–09 (Leonard). Dr. Leonard then adjusts this result to make it comparable to Google's proposal, which seeks a 15% reduction of up to 15% in certain costs incurred to acquire revenues. Adjusting for this cost reduction, Dr. Leonard concludes that the equivalent percent of revenue (after deducting similar costs) in Subpart A is 10.2% in 2015 and 11.3% in 2016. *Id.* at 1109.

Copyright Owners do not dispute the calculations made by Professor Marx and Dr. Leonard in these regards. However, they emphasize that this approach nonetheless is not useful because it fails to fails even to attempt to explain the significant differences in access value between the purchase of a download or CD, on the one hand, and a subscription to (or free use of) an interactive streaming service, on the other. That is, whereas the Services and Apples' *first* approach is deficient because its conversion ratios are not applicable, Services' *second* approach fails because it simply bypasses altogether the problem of access value differences.

Finally, I take note of a point made by Professor Marx, that Copyright Owners, like any seller/licensor, would rationally seek to equalize the rate of return from each distribution channel *i.e.,* from licensing rights to sell DPDs/CDs under subpart A and from licensing to interactive streaming services under subpart B. As she explains:

> This principle of equalizing rates of return across different platforms has some similarities with that underlying the approach of W. Baumol and G. Sidak, ''The Pricing of Inputs Sold to Competitors,'' . . . . They propose an efficient component pricing rule whose purpose is to ensure that the bottleneck owner (in our case, the copyright holder) should get compensation for access from all downstream market participants, whether existing or new entrants, that leaves him as well off as he would have been absent entry.

Marx WDT ¶ 104, n.118. The Judges first identified this principle in *Web IV,* through a colloquy with an economic witness. *See Web IV,* 81 FR at 26344 (SoundExchange's economic expert, Professor Daniel Rubinfeld, acknowledging that, generally, licensors, as ''a fundamental economic process of profit maximization . . . 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.'').

However, that argument is dependent upon a usable conversion ratio to equalize access value per unit. Professor Marx does not explain how, absent such conversions, it would be possible to equalize rates of return across platforms. Accordingly, I find that the principle of ''equalized returns'' relied upon by Professor Marx cannot be applied.

**3. Apple's Proposed Rate**

Apple proposes a per-play rate of $0.00091 per unit. However, that rate is premised on two analytical factors that I have rejected, as discussed *supra.* First, as a single, per-play rate, it fails to reflect the variable WTP in the market, rendering it a less efficient upstream royalty rate. Second, Apple's proposed $0.00091 rate is derived from the subpart A conversion ratio approach that I have rejected, for the reasons discussed *supra.* I incorporate herein my analysis rejecting a per-unit approach, and my analysis rejecting the subpart A conversion ratio approach.

**4. Findings Regarding the Reasonable Rate (before consideration of the four itemized factors)**

There are several rates, as discussed *supra,* that I find to be supported by sufficient evidence to be relevant to the setting of rates in the present proceeding.

First, Dr. Eisenach's Pandora Opt-Out Agreement benchmarks, as contained in those agreements (*i.e.,* without extrapolation), reflect a ratio of [REDACTED] of sound recordings:musical works in a comparable benchmark setting. This ratio, as noted *supra,* translates to *a TCC percent of [REDACTED]%.* With sound recording royalty rates of approximately [REDACTED]% to [REDACTED]%, this TCC reflects a royalty equal to *an effective percent of total*[314] *revenue equal to [REDACTED]% to [REDACTED]%.*

Second, the YouTube agreements with music publishers identified by Dr. Eisenach—that relate to [REDACTED]. That [REDACTED]% royalty is a denominator in the ratio concept utilized by Dr. Eisenach,[315] and the numerator is the [REDACTED] sound recording royalty paid to the record companies. As explained *supra,* YouTube has agreed to pay [REDACTED], and has agreed to pay [REDACTED]. The [REDACTED] ratio reduces to [REDACTED], implying *a TCC ([REDACTED]) of [REDACTED]%.* The [REDACTED] ratio reduces to [REDACTED], implying *a TCC ([REDACTED]) of [REDACTED]%.*

Third, I look at the effective rates paid by Spotify, the largest interactive streaming service in terms of in terms of the number of subscriber-months and the number of plays. *See* Marx WRT ¶ ¶ 37–38 & Figs. 8 & 9. Under the current rate structure, as noted *supra, [REDACTED]*[316] *[REDACTED].*

Continuing with a consideration of Spotify's rates paid under the existing rate structure, [REDACTED].

[REDACTED]. The average rate is relevant in this proceeding because, as discussed *supra,* Spotify's two tiers are interrelated, in that the ''freemium'' model construes ad-supported listeners as a pool of potential converts to the subscription tier, even as they generate (indirectly) advertising revenue that converts to royalties for the Copyright Owners under the TCC prong.

Fourth, leaving the Spotify rates, I note that direct deals identified in the record reflect rates in the present regulations (as Dr. Eisenach noted, albeit he minimized the importance of those direct agreements). Also, the direct agreements contain additional terms that make them relatively uncertain benchmarks. For example, although Google's direct deals include rates that reflect the statutory rate—

[314] In the context of this section, ''total'' revenue is intended to distinguish from the percent of royalties paid by interactive streaming services to record companies as sound recording royalties (*i.e.,* TCC).

[315] To repeat for the sake of clarity, Dr. Eisenach does not rely on the ''static image'' agreements for his ultimate opinion. But the text accompanying this footnote expresses how the ''static image'' rate is being applied based on Dr. Eisenach's ratio approach.

[316] The record in some places records this figure as [REDACTED]% and [REDACTED]%. I understand these differences reflect rounding of figures and some discrepancy as to the time period covered. In any event, these differences do not impact my findings.

[REDACTED]. Leonard AWDT ¶ ¶ 53–54.[317] Also, its direct deals omit the Mechanical Floor, *id.,* which, as noted *supra,* [REDACTED].

[REDACTED] pays [REDACTED] royalties equal to [REDACTED] for its bundled subscription services which, after subtracting an [REDACTED]% performance royalty, equals a mechanical royalty of *[REDACTED] % of [REDACTED].* Leonard AWDT ¶ 64. [REDACTED].

Apple pays [REDACTED]. Wheeler WDT ¶ 10. [REDACTED]. *See* Eisenach WDT ¶ 10 (''[A]s a matter of economics the Section 115 license operates as a ceiling but not a floor on Section 115 royalties.'').

Based on the foregoing evidence regarding rates, I find that the existing rate structure is generating effective percent-of-revenue rates in the manner in which it was intended. The 10.5% headline rate is exceeded by the rates paid by [REDACTED], even as the effective per play rates that generate those percentages are lower. The rates actually paid and the rates under the 2012 benchmark are also consistent with the benchmark rates arising from the benchmark analyses undertaken by Dr. Eisenach that I find to be sufficiently comparable, particularly with regard to the TCC prong. The clustering of the effective percent of revenue rates in this regard indicates that the price discriminatory aspects of the existing structure allow for the growth of revenue, as the interactive streaming services ''exploit the demand curve'' by offering tiers of service that appeal to the budget constraints and the preferences of the segmented marketplace. The fact that a wide array of products with different characteristics at different price points has monetized usage, such that some effective actual rates exceed the 10.5% ''headline'' rate, is testament to the mutual benefits of the existing rates.

As noted *supra*, this finding does not mean that there might not be better ways to monetize demand, and I do not suggest that the record permits me (or the majority) to identify appropriate rates with mathematical precision. However, as the D.C. Circuit has held, and as noted *supra,* our rate-setting is an intensely practical affair, and mathematical precision is not possible. *Nat'l Cable Television Ass'n,* 724 F.2d at 182. Moreover, the Judges are constrained: We must choose among the rates and structures proposed by the parties, or reasonably ascertainable from the evidence, through an evidentiary process that the parties were permitted to consider, challenge and rebut at the hearing. What the Judges cannot do is attempt to cobble together elements of different proposals (the majority's ''Frankenstein's Monster'' approach, as characterized by Copyright Owners) without evidence as to how those combined elements would impact the industry and its participants.

**VI. SUBPART C: APPLYING THE 2012 BENCHMARK**

The parties' negotiations in *Phonorecords II* that culminated in the 2012 settlement focused more intensely on the rates that would apply to new service types, including cloud locker services, that would ultimately be embodied in subpart C of 37 CFR part 385. Parness WDT ¶ 13; Levine WDT ¶ ¶ 38–39; Israelite WDT ¶ ¶ 28–30. In fact, the subpart C negotiations that created five new service categories were quite protracted, the subject of a negotiation over more than one year. 3/29/17 Tr. 3652–55 (Israelite). Moreover, in this protracted give-and-take, the NMPA rejected some categories proposed by the services, while others were accepted and became part of subpart C. *Id.* at 3654- 56.

In setting these rates—rather than developing a new royalty structure for these service types—the parties ultimately agreed on a structure for subpart C that resembled the subpart B structure, adopting a headline percentage of revenue royalty rate and per-subscriber and TCC minima. Parness WDT ¶ 14; *see also* 37 CFR 385.22. As with the bundling negotiations relating to subpart B, the parties negotiated and created a bundled service category under subpart C (with certain adjustments to the definition of ''revenue.'') 3/8/17 Tr. 161–64 (Levine); 37 CFR 385.21. Not only are these provisions the default statutory terms, but publishers and service also incorporate these rates and terms in their direct licenses. *See* Leonard AWDT ¶ ¶ 54, 58, 67, 69.

Copyright Owners now urge the elimination of these subpart C provisions. They note that, although the Services had been very interested in locker services (a large focus of subpart C) during the 2012 negotiations, locker services have decreased in popularity and significance, and have largely disappeared. They explain this phenomenon as linked to the transition by listeners from ownership to access models, rendering functionally unimportant a listener's access to his or her own libraries as stored in a cloud locker. In fact, Copyright Owners point out that the Services' own witnesses have acknowledged this decrease in the popularity of lockers. 3/8/17 Tr. 159–160 (Levine); 3/16/17 Tr. 1458–1461 (Mirchandani) ([REDACTED]); Mirchandani WDT ¶ 33 ([REDACTED]), Copyright Owners further note that this fall in popularity is reflected in the fact that neither Spotify nor Pandora offers either a purchased content or a paid locker service. They note that Apple, which at one time offered a paid locker service, has abandoned that product, but still offers a purchased content locker service (perhaps a function of its market share of previous listener purchases of digital downloads from its iTunes Store). 3/22/17 Tr. 2523 (Dorn).

Copyright Owners also note that the Services' subpart C arguments suffer from the same defect as their subpart B arguments: they have not provided any evidence explaining the basis for any of the rates or terms contained in . . . subpart C . . . . of the statute. CORPFF–JS at p.2.

In opposition, the Services argue that Copyright Owners do not point to any evidence to show that locker services have completely ''disappeared.'' Rather, they note that Apple and Amazon continue to offer locker services. Joyce WDT ¶ 5; Mirchandani WDT ¶ ¶ 16–17. In this regard, Apple notes that each service in this proceeding that sells downloads also offers locker services. *See* 3/22/17 Tr. 2523–25 (Dorn); Ramaprasad WDT, Table 3. The Services also note that Copyright Owners are seeking rates for subpart C products that are substantially higher than present rates. *See* Joyce WDT ¶ 19.

More generally, the Services urge the Judges to use the subpart C rate structure as the benchmark for rates in the forthcoming period for the same reasons as they urge the use of the subpart B benchmarks a an appropriate benchmark. That is, the 2012 subpart C benchmarks were negotiated by the same parties, covering the same rights over a relatively contemporaneous period, and the economic circumstances are sufficiently similar. Amazon characterizes the ''[t]he existing . . . Subpart C service categories and rate structures [as] represent[ing] the collective efforts of industry participants . . ., including [a] proceeding[] before the [Judges] which were resolved by a negotiated settlement agreement among the participants many of whom are also participants in this proceeding.'' Mirchandani WDT ¶ ¶ 58–62. Moreover, several of the listed services already provided (or had plans to provide) subpart C services in 2012, underscoring the relevance of the negotiated settlement. *See* 3/18/17 Tr. 157–158 (Levine) (discussing Google's plans to launch a . . . locker service in

[317] [REDACTED].

the period of *Phonorecords II* negotiations); Mirchandani WDT ¶ 16 (discussing launch of Amazon locker service in mid-2012).

The Services also criticize the application of Copyright Owners' greater-of approach in the subpart C context as absurd. They claim that under Copyright Owners' proposal, licensors would receive $0.091 for each download of a copy from a purchased content locker, and at least $1.06 per-month for each month that a listener facilitates a copy in order to accesses the track via that locker, because. This would be absurd, according to the Services, because the separate copy is the basis for the royalty payments that Copyright Owners had already received when the listener originally purchased the product. Mirchandani WRT ¶ 47. Adding to this criticism, Apple emphasizes that Copyright Owners fail to mention that: (1) all purchased content locker services are free by definition, pursuant 37 CFR 385.21; and (2) some locker service streams originate from private copies of songs that are not streamed content from a central service (see 3/13/17 Tr. 829–830 (Joyce).

On balance, I find that the subpart C rate structure has the same attributes of a useful benchmark as does the subpart B rate structure. The categories of parties were the same, the rights are the same and the agreement is relatively contemporaneous. I do not find that the lack of popularity of the subpart C configurations cuts against the use of the 2012 rate structure as a benchmark. If the subpart C categories wither in the marketplace, the impact of this rate structure will be of little importance. But if these lockers, bundles and other offerings grow in popularity, the relative strength of this benchmark will be preferable to the ''greater of'' formulation proposed by Copyright Owners.

In that regard, Copyright Owners' rate structure proposal for subpart C (identical to its proposal for subpart B) is rejected for the same reasons as it was rejected for subpart B, and those criticisms are incorporated into this section. Further, locker services are distinguishable from other products. Musical works embodied in the sound recordings that have already been purchased have a value that is reflected in the sale through another distribution channel. It would be anomalous to apply the same rate structure to the right of a service to obtain a copy so that the downstream customer could store or access that which he or she already owns. I find that the parties' prior arm's length negotiations of the subpart C structure better reflects their understanding of the different use values implicated by subpart B and the locker services identified in subpart C.[318]

## VII. The Four Itemized Factors in Section 801(b)

The four itemized factors set forth in section 801(b)(1) require the Judges to exercise ''legislative discretion'' in making independent policy determinations that balance the interests of copyright owners and users.'' *SoundExchange, Inc.* v. *Librarian of Cong.,* 571 F.3d 1220, 1224 (DC Cir. 2009); *see also RIAA v. CRT,* 662 F.2d 1, 8–9 (D.C. Cir. 1981) (analyzing identical factors applied by predecessor rate-setting body and holding that the statutory policy objectives of 801(b)(1) ''invite the [Board] to exercise a legislative discretion in determining copyright policy in order to achieve an equitable division of music industry profits between the copyright owners and users'').

The four factors ''pull in opposing directions,'' leading to a ''range of reasonable royalty rates that would serve all these objectives adequately but to differing degrees.'' *Recording Indus. Ass'n of Am. v. Copyright Royalty Tribunal,* 662 F.2d 1, 9 (D.C. Cir. 1981) (''*Phonorecords 1981 Appeal*'') (citations omitted). Certain factors require determinations ''of a judgmental or predictive nature,'' while others call for a broad fairness inquiry. *Id.* at 8 (citations & quotations omitted). Accordingly, the Judges are ''free to choose'' within the range of reasonable rates . . . within a 'zone of reasonableness.' '' *Id.* at 9 (citations omitted).

Further, as explained at note 205 (and the accompanying text) *supra,* the ''reasonableness'' analysis can be undertaken as an initial step, followed by consideration of the four itemized factors, or the four-factor analysis can be undertaken as part of the ''reasonableness'' analysis. I have followed what I understand to be the more conventional approach in proceedings applying the section 801(b)(1) standards by essentially undertaking the former approach. However, my following consideration of the four itemized section 801(b)(1) factors also provides further support for the findings identifying the reasonable rate structure and rates.

### A. The Relationship of the Four Itemized Factors to the Market Rate

The D.C. Circuit recently reiterated the relationship between the 801(b) standard and market-based rates by contrasting that standard with the willing buyer/willing-seller standard set forth in 17 U.S.C. 114(f)(2)(B). The court noted that the two standards are distinguishable by the fact that, unlike section 114(f)(2)(B), section 801(b)(1) does not focus in the same manner as rates that would be set in a marketplace. *SoundExchange, Inc. v. Muzak LLC,* 854 F.3d 713, 715 (D.C. Cir. 2017).

However, to the extent that market factors may implicitly address any (or all) of the four itemized factors, the reasonable, market-based rates may remain unadjusted, And, if the evidence suggest that the market-based rates fail to account for any (or all) of these four itemized factors, the Judges will adjust the reasonable, market-based rate appropriately. *See SDARS I, supra* at 4094 (applying the same itemized factors and holding that ''[t]he ultimate question is whether it is necessary to adjust the result indicated by marketplace evidence in order to achieve th[e] policy objective.'').[319]

### B. Factor A: Maximizing the Availability of Creative Works to the Public

#### 1. Introduction

Factor A provides that rates and terms should be determined to ''maximize the availability of creative works to the public.'' 17 U.S.C. 801(b)(1)(A). Of particular importance, this provision unambiguously links the *upstream* rates and terms that the Judges are setting with the *downstream* market, in which ''the public'' is listening to sound recordings that embody musical works.

In a prior Determination, the Judges made a general statement, attributed to an expert economic witness, Dr. Janusz Ordover, in *SDARS I,* that ''[w]e agree with Dr. Ordover that 'voluntary transactions between buyers and sellers as mediated by the market are the most effective way to implement efficient allocations of societal resources.'

[318] Once again, separate and apart from the usefulness of the 2012 benchmark structure and rates as benchmark evidence, the existing rate structure and rates, which embody the 2012 settlement, serve as a default rate structure and set of rates, because the other evidence in the record does not support an alternative approach. *See Music Choice, supra.*

[319] Thus, the Judges reject Copyright Owners' argument that the first three itemized section 801(b)(1) factors *per se* reflect the same forces that shape the rate set in the marketplace. *See* 4/4/17 Tr. 4589, 4666 (Eisenach). The Services also challenge Dr. Eisenach's assertion that he believes that the first three itemized factors reflect market forces, based on his prior writings and testimony, a charge that he persuasively denies. *Compare* SJRCOPFF at p.5 *with* 4/4/17 Tr. 4676–79 (Eisenach). I find this dustup to be irrelevant to their objective analysis of the itemized 801(b)(1) factors.

Ordover WDT at 11.'' *SDARS I,* 73 FR at 4094. However, as the discussion of the economics of this market, *supra,* should make plain, I do not agree that such a broad statement captures all the economic realities of the market. In fact, Professor Ordover's full testimony in *SDARS I* clearly demonstrates that he fully appreciates the particular aspects of the economics of the markets at issue, including the aspects relevant to Factor A. More fully, Professor Ordover testified as follows in *SDARS I:* [320]

> Unimpeded market transactions promote economic efficiency and lead to supply and demand decisions that maximize society's economic welfare. [I]n the special case of markets for sound recordings and other intellectual property . . . the incremental cost of serving any single user is very low relative to the initial cost of creation, and use by any single user does not diminish the availability of the content to others. . . . [T]o account for these differences, pricing in these markets should be based on the underlying value of the product to the buyer.
>
> . . .
>
> The solutions to this policy problem focus on an oft-noted tension in the pricing of intellectual property between static and dynamic efficiency. . . . [E]conomists have . . . a clear answer . . . provided by so called second-best . . . pricing.'' . . . The rule is that those customers—be they final users or intermediate customers (such as the SDARS, for example)—whose demand for the product (content) is inelastic should pay a higher markup above the marginal cost of serving them, and those whose demands are elastic should pay a lower markup. . . . Since elasticity of demand is related to ''willingness to pay'' [WTP] [so] users or usages with a high [WTP] . . . should be required to contribute the most (per unit of usage). . . . *[T]his principle assures that the greatest number of consumers will be able to benefit from use of a product* . . . . [''V]alue-based pricing'' . . . provides the correct incentives for producers of content insofar as it ensures that overall revenues from all sources recoup the costs of creating the content in the first place.

Ordover WDT at 4, 16–18 (emphasis added). Professor Ordover then noted the same upstream/downstream link that I have identified in this proceeding:

> [I]t is important to note that demand for music content by the SDARS [or any distribution channel] is a ''derived demand'' in the sense that it flows from consumers' demand for the service as a distribution channel for music. . . . [T]he SDARS' [or any distribution channel's] [WTP] content owner is inextricably linked to consumers' [WTP] for the . . . service . . . .

*Id.* at 18–19 (emphasis added).[321]

**2. The Services' Position**

On behalf of the Services, Professor Marx approaches Factor A in a manner that is at once novel (for these proceedings) yet consistent with fundamental and relevant economic principles. Specifically, she asserts that maximization of the availability of musical works (embodied in sound recordings) to the public, through interactive streaming, requires that the combined ''producer surplus'' and ''consumer surplus'' be maximized, because that leads to listening by all segments of the public regardless of their WTP. To understand Professor Marx's analysis, the economic terminology on which she relies needs a brief explanation.

The ''producer surplus'' is ''the amount by which the total revenue received by a firm for units of its product exceeds the total marginal cost. . . .'' A Schotter, *Microeconomics: A Modern Approach* at 389 (2009). The ''consumer' surplus'' is ''[t]he difference between what the consumer would be willing [and able] to pay and what the consumer actually has to pay.'' *Mansfield & Yohe, supra,* at 93. When a perfectly competitive market is in equilibrium (or tending that way) ''the sum of consumer surplus . . . and producer surplus . . . is maximized.'' *Schotter, supra,* at 420. By contrast, if a market is not perfectly competitive because the sellers have some degree of market power, and the level of output is somewhat restricted, producer surplus increases relative to consumer surplus—with a portion of the overall surplus redistributed to producers/sellers. Another portion is lost as ''a pure 'deadweight' loss . . . the principal measure of the allocation of harm'' arising from the exercise of market power. *Mansfield & Yohe, supra,* at 499. *See also* Schotter, *supra,* at 398 (setting forth the accepted definition of ''deadweight loss'' as ''[t]he dollar measure of the loss that society suffers when units of a good whose marginal social benefits exceed the marginal social cost of providing them are not produced because of the profit-maximizing motives of the firm involved.'').[322]

As the foregoing definitions imply, the two surpluses may be measured by reference to a single equilibrium price. However, when sellers are able to *price discriminate,* they enlarge the total value of the combined surpluses, diminish the ''deadweight loss'' and appropriate for themselves the larger, combined surplus. *See Varian, supra* at 465 (With price discrimination, ''[j]ust as in the case of a competitive market, the sum of producer's and consumer's surplus is maximized [but with] the producer . . . getting *the entire* surplus generated in the market. . . .''). In fact, price discrimination is ubiquitous in the marketplace. *See Baumol, Regulation Misread by Misread Theory, supra.*

Professor Marx marshals these microeconomic principles, Marx WDT ¶¶ 119–122, to explain why the 2012 rate structure tends to incentivize and support the maximization of musical works available to the public under Factor A. *Id.* ¶¶ 123–133. As she testified:

> [H]aving different means of price discrimination is going to allow greater efficiency to be achieved [i]f we have a way for low willingness to pay consumers to access music, for example, student discounts, family discounts or *ad-supported streaming, where low-willingness-to-pay consumers can still access music in a way that still allows some monetization of that provision of that service.*

3/20/17 Tr. 1894–95 (Marx) (emphasis added). *See also* Marx WDT ¶ 12 (''An economic interpretation of [F]actor A is that the royalty structure should ''maximize the pie'' of total producer and consumer surplus. . . .'').

More granularly, Professor Marx explained why the price discriminatory rate structure is superior to a per play model in maximizing the availability of musical works to the public:

> The subscription model provides an efficiency benefit because the price of a play is equal to the marginal cost of roughly zero—a subscriber faces the true marginal cost of playing a song over the internet and thus consumes music at the efficient level. When subscribers face a per-play royalty cost of zero, interactive streaming services have the appropriate incentive to encourage music listening at the margin.
>
> In contrast, if interactive streaming services faced a positive per-play royalty cost, they would have a diminished incentive to attract and retain high-use consumers, the very type of consumers who create the most social surplus through their listening. They would also have an incentive to discourage music listening among the high-use consumers they retain. The higher the level of per-play royalties is, the more this incentive might affect the behavior of interactive streaming services.

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[320] I recount Professor Ordover's testimony to provide the context for the snapshot of his testimony excerpted and relied on in *SDARS I.* I do not rely on Professor Ordover's testimony in deciding any *factual* issues in this proceeding.

[321] To estimate the different values (elasticities) within a distribution channel, Professor Ordover found ''highly informative'' the ''survey data and results'' obtained by a testifying survey expert, *id.* at 23—just as I find informative the results of the Klein Survey.

[322] To be clear, this *static* ''harm'' is hardly conclusive evidence that such market power is actually harmful, or even inefficient, on balance, in a *dynamic* sense. A monopoly may be more efficient in reducing unit costs because of, *inter alia,* necessary scale (such as a natural monopoly) or because of superior production techniques.

*Id.* ¶ ¶ 130–131 and n.135 (emphasis added) [323]

Although Professor Marx's analysis is based on an understanding that maximizing the availability of musical works is a function of incentives to distributors and a function of *downstream* demand characteristics, she notes that the variable, percent-of-rate based rate structure is consistent with agreements in the unregulated *upstream* market, where record companies license sound recordings to these same interactive streaming services. In that regard, she notes:

> Ironically, given the preference of . . . Copyright Owners' economists for market outcomes in this context, they support a proposal that would tend to [REDACTED], which the unregulated sound recording side of the market has facilitated. Their proposal would also completely do away with percentage-of-revenue rates that form a key part of unregulated rates negotiated between music labels and interactive streaming services.

Marx WRT ¶ 84 (emphasis added).

Beyond these theoretical arguments, Dr. Leonard notes that this is the basic rate structure that has existed for two rate periods, and there is no evidence that the songwriters as a group have diminished their supply of musical works to the public. In fact, he notes that the music publishing sector has been profitable throughout the present rate period. 3/15/17 Tr. 1120 (Leonard). I understand this point—particularly in the context of Factor A—to indicate that there has been and will continue to be a growing supply of musical works available to the public, because profitability is a market signal for the entry of new resources and supply. *See generally Varian, supra* at 416 (''[I]f a firm is making profits we would expect entry to occur.'').

### 3. Copyright Owners' Position

Copyright Owners, principally through the rebuttal testimony of Professor Watt, argue that Professor Marx has made a fundamental error in equating the maximizing of availability of musical works with a maximization of the sum of the producer and consumer surplus. Watt WRT ¶ 10. According to Professor Watt: ''A better understanding of criterion A is that the royalty payments should ensure that a plentiful supply of works is forthcoming into the future. . . .'' *Id.* To accomplish that end, Professor Watt argues the rates should be set so as to ensure that ''creators are given the correct incentives to continue to create and make available valuable works.'' *Id.*

Further, Professor Watt argues that even if the rates and rate structure are designed to maximize the consumer and producer surplus, such maximization would not inform the Judges as to whether that result satisfies Factor A. Rather, according to Professor Watt:

> In effect, a royalty structure is simply a way in which producer surplus, once created, is shared between the interactive streaming firms and the copyright holders, but in and of itself, the structure does not determine the size of either producer or consumer surplus. Consumer surplus and producer surplus are both entirely determined by the interplay of the demand curve for the product in question (here, interactive music streaming) and the way the product is priced by the interactive streaming industry to its consumers. That is, regardless of the structure of the royalty payments, the ''size of the pie'' is determined by the unilateral decisions made by interactive streaming firms about their pricing to consumers.

Watt WRT ¶ 11.

Professor Watt also attempts to decouple the upstream and downstream rate structures by analogizing interactive streaming to a retail restaurant offering of an ''all you can eat buffet.'' There, restaurants pay a positive per unit price for inputs of food offered at the buffet, yet still—according to Professor Watt—charge a single price for unlimited access to the buffet. (Professor Watt does not provide any evidence of how buffet restaurants in fact make pricing decisions.) Thus, he concludes that a retailer, such as an interactive streaming service or a buffet restaurant, can pay for inputs (musical works or food) per-unit while still charging an up-front access fee ($9.99 per monthly subscription or $9.99 for a buffet meal). By this analogy, Professor Watt purports to demonstrate that interactive streaming services do not *require* non-unit royalty rates to serve their downstream listeners. *Id.* ¶ 12.

Professor Watt further notes that Spotify is not accurate when it claims that listeners to its ad-supported service do not pay a marginal positive price. He notes that listening to advertising that interrupts the music imposes a time-related/annoyance cost that the listeners must accept. This suggests to Professor Watt that per-unit pricing (at least in a non-monetary manner) indeed is possible downstream. *Id.* ¶ 13. (However, to the extent the advertising is informative, especially when it is targeted to specific listeners, it is not clear from the record that such ''interruptions'' would constitute a pure cost. *See* Phillips WDT ¶ 33 (noting the ability of streaming services to ''deliver extremely targeted advertising to particular audiences.'')).

Further, Professor Watt opines that any positive marginal cost pricing of songs by interactive streaming services on subscription plans necessarily would be offset by a reduction in the up-front subscription price. He further suggests that this consequence would not necessarily be deleterious for the streaming service because ''[w]ith the reduction in the fixed fee (along with the positive per-unit price), it becomes entirely possible that consumers who were not initially in the market now find it to be in their interests to join the market, consuming positive amounts of streamed music where previously they consumed none.'' *Id.* ¶ 15.

In their affirmative case regarding Factor A, Copyright Owners argue that ''availability maximization'' should be considered through the lens of the creators, who seek high rates as a signal to spur creation, and would see low rates as a disincentive. In particular, another of Copyright Owners' expert economic witnesses, Professor Rysman, testified, in colloquy with the Judges, that the importance of price-signaling was so paramount that even a hypothetical *outlandish* royalty would induce creators to maximize availability:

> THE JUDGES: So if all the available music was available on streaming services and the subscription price was $10,000 a month, that would be equally available as it would on an ad-supported service?
>
> PROFESSOR RYSMAN: That's how I read availability. . . . I think that would raise questions in the other factors, but as I read availability, that would still satisfy availability.

4/3/17 Tr. 4397 (Rysman).

### 4. Analysis and Findings

For several reasons, I find that Professor Marx's analysis of how a price discriminatory model maximizes availability is correct.

First, the rationale for price discrimination is two-fold; not only does it serve low WTP listeners, but it also serves copyright owners, by incentivizing interactive streaming services to increase the total revenue that the price discriminating licensor can obtain. Any seller or licensor would prefer to maximize its revenue, and a rate structure that will effect such maximization thus would be the best structural inducement. Moreover, for

[323] With regard to Factor A as it relates to Copyright Owners' proposal, Professor Hubbard also notes the supply-side ''Cournot Complements'' problem created by Copyright Owners' reliance on the unregulated sound recording market. This is a problem because rates in such a ''must have'' unregulated market can be even higher than monopoly rates, thereby depressing the quantity supplied—contrary to a goal of maximizing the availability of musical works. *See* 4/7/17 Tr. 5532 (Hubbard).

purposes of applying Factor A, a rate structure that better increases revenues, *ceteris paribus,* would induce more production of musical works, a result that Copyright Owners should desire.[324]

Second, and by contrast, it would be less profitable simply to equate ''availability'' with a higher rate. As noted *supra,* any product that is priced beyond the WTP of a significant portion of the public is *unavailable* to that segment. In this regard, Copyright Owners have taken a cramped and unrealistic view of such incentives. In particular, I disagree with Professor Rysman's assertion that even a $10,000 per month subscription price would increase ''availability.'' I find that he misapprehends the nature of a price signal. If the price is so high as to eliminate or reduce total revenue to creators, in no way will higher rates simply induce the supply of creative works over time.[325] Indeed, even monopolists do not seek the highest price possible, but rather seek to maximize profits. *See Mansfield & Yohe, supra,* at 362–63 (''Monopolies maximize profits by producing where marginal cost equals marginal revenue.''). Thus, even monopolists—who have the most market power—are constrained in their pricing by the demand curve and the marginal revenue it creates.[326] Although a higher royalty *rate* might have an immediate superficial appeal, if the consequence will be lower revenues, the high per-play rate would reveal itself as a form of fool's gold.[327]

Third, I find that the objective of maximizing the availability of musical works *downstream* to the public is furthered by an *upstream* rate structure that contains price discriminatory characteristics that enhance 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). That is, as recognized by both Professor Marx in this proceeding—and Professor Ordover in *SDARS I*—upstream pricing is a function of derived demand, and should be ''value-based,'' *i.e.,* discriminating among the different values placed on streamed music by different segments of listeners.

Fourth, I find that Professors Watt and Marx are talking past each other regarding price discrimination. Professor Watt argues that a percent-of-revenue based upstream royalty structure is not *necessary* in order for the streaming services to price discriminate downstream. However, I understand Professor Marx to be asserting *not* that a percent-of-revenue royalty structure is a *necessary* condition for downstream price discrimination, but rather that some form of price discrimination is appropriate, and that a discriminatory percent-of-revenue royalty structure will better align the upstream and downstream incentives, thus maximizing the availability of musical works downstream. A single upstream price for musical works would tend to make price discrimination downstream more difficult, because (as noted by Professor Marx and Professor Ordover in *SDARS I*) upstream demand is derived from downstream demand.

To be clear, I do agree with Professor Watt that percent-of-revenue pricing is not *necessary* to facilitate price discrimination downstream. Indeed, in *Web IV,* the Judges adopted multi-tier upstream per-play pricing, not percent-of-revenue pricing, to reflect variable WTP downstream. But here, Copyright Owners have not proposed multiple-tier per unit pricing, and nothing in the record indicates how the Judges could mold Copyright Owners' per- play rate into multiple, discriminatory rates. The only rate structure proposed in this proceeding that promotes such efficiencies is the existing rate structure. Because the Judges remain subject to (and bounded by) the evidence adduced at the hearing, they have before them only one rate structure that promotes and reflects the downstream market's need for price discrimination to promote the availability of musical works to the public.[328]

In this regard, Pandora notes the challenges of operating a business that has fixed revenues per customer but variable cost. Herring WRT ¶ 17. Copyright Owners did not provide sufficient evidence that their proposed per unit royalty rate would better accommodate such risks. Instead, as noted *supra,* Copyright Owners rely on an analogy; Professor Watt's comparison of the streaming industry to the buffet restaurant industry, in which he assumed input suppliers did not charge based on a percent of revenue. However, Professor Watt admitted that his testimony in this regard was ''pure observation,'' and that he has never consulted for a buffet restaurant and has never performed any economic analysis of the business strategies of buffet restaurants. 3/27/17 Tr. 3173–74 (Watt). I note one particular difference between a foodstuff input to a buffet restaurant and a musical stream input to an interactive service: the foodstuff is a private good, rivalrous in consumption, *i.e.,* with a positive marginal cost, whereas the copy of the musical work is non-rivalrous, *i.e.,* with a zero

[324] This point appears to raise a question: How could Copyright Owners and their economic experts argue against a rate structure that inures to their benefit as well? The answer is: They do not. As stated *supra,* they advocate for a rate set under the bargaining room theory, through which mutually beneficial rate structures can still be negotiated, but not subject to the ''reasonable rate'' and itemized factor analysis required by law. In those negotiations, as Dr. Eisenach candidly acknowledged, Copyright Owners would have a different threat point to use in order to obtain better rates and terms. 4/4/17 Tr.4845–46 (Eisenach).

[325] This point is reminiscent of an old joke from the era of the Great Depression. A poor boy is selling Apples on the street corner for a price of $1 million per apple. A man approaches and asks the boy: ''How many apples do you expect to sell at that price?'' To which the boy responds: ''Well, I only have to sell one!''

[326] On a technical economic level, perhaps beyond the material in a prototypical ''Economics 101'' course, a party with market power, whether a monopolist or otherwise, is not subject to a supply curve, because a supply curve depicts how much supply would be forthcoming at given prices, whereas a firm with any pricing power can influence both price and quantity. *See* Krugman & Wells, *supra,* at 368 (''[M]onopolists don't have supply curves . . . [A] monopolist . . . does not take the price as a given; it chooses a profit maximizing quantity, taking into account its own ability to influence the price.''). Oligopolists act similarly, but their influence on price is complicated by their predictions of, and reactions to, the pricing and production decisions of their oligopolistic competitors. *See Nicholson & Snyder, supra,* at 521 (''[I]n an oligopoly . . . prices depend on how aggressively firms compete, which in turn depends on which strategic variables firms choose, how much information firms have about rivals, and how often firms interact with each other in the market.'') In similar fashion, Professor Watt acknowledged the presence of a supply curve in competitive markets but declined to conclude that one exists in the markets at issue here. 3/27/17 Tr. 3035–36 ([JUDGES]: ''Is there a supply curve in the market?'' [PROFESSOR WATT]: ''[T]hat's a hard question to answer. . . . [C]learly . . . economic theory points to certain markets where there is no supply curve, *per se,* and other markets in which there would be. Like a perfectly competitive market, it's acceptable that there's a supply curve. . . . [O]nce you get into non-perfectly competitive output markets . . . it becomes really debatable.'').

[327] And, again, Copyright Owners are not economic naifs. Once more, the bargaining room approach is relevant, in connection with the foregoing price discrimination analysis. A licensor who could segment the market via WTP could exploit the demand curve and increase revenues above the revenues available in a single-price market. Copyright Owners appear to understand this point—acknowledging they would *bargain* with licensees if the single-price rate set by the Judges was too high.

[328] More particularly, in *Web IV,* the Judges set *multiple* per-stream noninteractive royalty rates on a per-play basis, differentiating among subscription services, ad-supported services and educational webcasters. These decisions were based on the Judges' understanding of the evidence at the hearing. If the parties had presented the Judges with evidence in *this* proceeding that would have permitted them to fashion *price-discriminatory* per-play or per user rates, those would have been an options for consideration. However, there was insufficient evidence to permit me to depart from the parties' proposals in that regard.

marginal production cost. Because this difference is a critical aspect of the economics of intellectual property, Copyright Owners' failure to explore this distinction precludes judicial reliance on their proffered analogy.

Fifth, I find that Professors Watt and Marx are also talking past each other with regard to the usefulness of the consumer surplus/producer surplus approach. Professor Watt claims that the development of the surplus is relevant only to determine how the surplus will be split, as noted *supra. See* Watt WRT ¶ 11. Professor Marx takes issue with the assertion that the rate structure does not determine the size of either producer or consumer surplus. I understand Professor Marx's point to be that a royalty structure that efficiently incentivizes price discrimination will enlarge the producer surplus by appropriating consumer surplus and eliminating deadweight loss,[329] resulting in more surplus that can then be allocated between the licensors and licensees. Indeed, a close reading of Professor Watt's testimony is not inconsistent with this understanding. He testified that the rate structure ''in and of itself'' does not determine the size of the producer surplus. Rather, he testified that producer (and consumer) surplus are ''entirely determined by the interplay of the [downstream] demand curve and the way the product is priced [downstream].'' *Id.* But Professor Marx's point is that (1) upstream price discrimination makes downstream price discrimination more efficient; and (2) downstream price discrimination (a) increases the producer surplus (by appropriating consumer surplus and eliminating the ''deadweight loss); and (b) increases the quantity of musical works listened to downstream, *i.e.,* that are available to the public at prices approximating their WTP. She does not state that the rate structure ''in and of itself'' will impact the consumer surplus; in fact, her point is that the rate structure interacts with the demand curve, via price discrimination, to affect the size of the producer surplus.[330]

Sixth, I am unpersuaded by Professor Watt's argument that a positive per-play charge levied downstream would likely necessitate a lower subscription price that would maximize availability of music to the public. Although the point is economically logical, the services are the market actors who interact with listeners and are in the better position to gauge consumer demand. It would be inappropriate to rely on the opinion of Copyright Owners' expert as to what is theoretically possible if the business model was changed, or the impact of that change on the availability of musical works. Indeed, Professor Watt could testify only that if the interactive streaming services attempted to pass through to listeners a per-unit royalty via a per-unit downstream charge, it would become ''*possible*'' that consumers who were not initially in the market would be induced by the lower subscription price to join the market, preferring the combination of the lower subscription price and the positive per play rate to a higher subscription price and a lower per play rate. Watt WRT ¶ 15. However, the net effect of such a change is simply speculative. What can be said with some assurance is that such a change would impose a positive marginal cost on the listener for a product (the copy of streamed music) that has a zero production cost, which is inconsistent with static allocative efficiency. Also, if the services could obtain more revenue by lowering the subscription price and charging a per-play rate, there is *nothing in the record* to explain why they have not engaged in such a strategy on a widespread basis.[331]

Seventh, although I acknowledge that, in response to per-play pricing, the services could implement downstream usage restrictions, such as listening caps, usage-based tiers and overage charges (*see* Rysman WRT 75) such steps would not align with the price discriminatory model that would best serve a listening market with a variable WTP. Again, a price discriminatory upstream rate structure is appropriate not because it is either *necessary* or the *only* way in which this market can be structured, but rather because the record indicates it is a rate structure (among all the ''second best'' economic options) that has aligned well the characteristics of both the upstream and downstream markets in a manner that increases the availability of musical works ''down the demand curve.'' And once again, I note that Copyright Owners and their experts are not in the business of attempting to market interactive streaming services in the downstream market, so their ''advice'' as to the beneficial use of listening caps, overages and tiered subscriptions is simply speculative. *See* [REDACTED].

In sum, I am persuaded that Professor Marx's analysis of Factor A is consistent with the purpose of that statutory objective and sound economic theory. An upstream rate structure that contains multiple royalties reflective of and derived by downstream variable WTP will facilitate beneficial price discrimination. In turn, such price discrimination allows for access to be afforded ''down the demand curve,'' making musical works available to more members of the public. Accordingly, I would not make any adjustment pursuant to Factor A.[332]

**C. Factors B and C: Fair Income and Returns and Consideration of the Parties' Relative Roles**

Factor B directs the Judges to set rates that ''afford the copyright owner a fair return for his or her creative work and the copyright user a fair income under existing economic conditions.'' Factor C instructs the Judges to weigh ''the

[329] And shift some consumer surplus to the producers, which is the point of price discrimination from the perspective of the seller.

[330] Indeed, the enhancement of efficiency and the increase in profits (with the attendant signal to producers) is at the essence of price discrimination. *See Nicholson & Snyder, supra,* at 507 (when sellers' price discrimination leads to an increase in total output it is ''allocatively superior'').

[331] Professor Watt notes that Spotify has engaged in a non-monetary version of this strategy, offering an ad-supported service with no up-front subscription price but a non-monetary ''fee'' in the form of burdensome advertising. Watt WRT ¶ 15. However, as noted *supra,* it is not necessarily correct to equate listening to advertising with a monetary cost, because some advertising is valuable, especially more targeted advertising (why else would advertisers pay to advertise?) and non-monetary costs may be quite *de minimis* for an appreciable segment of the public. In any event, the business of identifying consumer preferences in order to establish the appropriate mix of up-front fees and per-play ''costs'' is the specialized business activity of the interactive streaming services, so any change in rate structure that is premised on an *assumptio*n that market demand and the availability of musical works can be equally or better served via a different rate structure needs to be supported by additional record evidence.

[332] The Majority Opinion finds that its significant increase in rates is necessary to provide sufficient income to songwriters and, thereby incentivize songwriting which will make more musical works ''available'' to the public. In this regard, the majority has made the same mistake as Professor Rysman, confusing higher prices with increased revenues. The majority has collapsed the existing price discriminatory rate structure into a single greater-of structure, based on two revenue prongs. (which I acknowledge to be a ''blunt'' price discriminatory tool, compared with the richer price discrimination in the 2012 rate structure that has worked successfully).The majority's approach fails to address two problems: (1) what is the evidence as to the elasticity of demand that makes them confidence that their 44% increase in rates will bring forth additional revenue to songwriters? (That is, what would be the corresponding decrease in quantity demanded?); and (2) with the TCC rate uncapped, how can the majority conclude that sound recording companies will not seek to preserve their share of royalties even as mechanical royalties rise under the majority's approach, leading to a spiraling of royalties and a reduction of overall quantity demanded that offsets the rate increases? (This second problem is a reprise of my broader criticism of the majority's assumption that the sound recording companies will docilely accept a ''Shapley Surrender'' (to coin a phrase) and accept the transfer of tens of millions of dollars of royalties from them to music publishers/songwriters, rather than attempt to preserve their revenues and take that preservation out of the hides of the services, Copyright Owners, or both.

relative roles of the copyright owner and copyright user in the product made available to the public,'' across several dimensions.[333]

As explained *supra,* Factor B, and, implicitly, Factor C, were included in section 801(b)(1) to establish a legal standard that would pass constitutional muster, yet the statutory language paralleled public utility-style regulatory principles.[334] According to Mr. Nathan in his 1967 congressional testimony, these principles were ill-suited for setting rates that ''equitably divided compensation for the ''relative roles'' of licensors and licensees in order to provide a ''fair'' outcome.[335] However, as the parties' economic experts make clear in their approaches to Factors B and C, economics has evolved since Mr. Nathan's 1967 testimony in which he criticized as economically impossible any regulatory attempt to equitably divide creative contributions.

The parties' economic experts have addressed the Factor B and C issues through either a Shapley value analysis or an analysis ''inspired'' by the Shapley valuation approach.[336] The Judges defined and described the Shapley value in a prior distribution proceeding: ''[T]the Shapley value gives each player his 'average marginal contribution to the players that precede him,' where averages are taken with respect to all potential orders of the players.'' *Distribution of 1998 and 1999 Cable Royalty Funds,* 80 FR 13423, 13429 (Docket No. 2008–1) (March 13, 2015) (citing U. Rothblum, *Combinatorial Representations of the Shapley Value Based on Average Relative Payoffs,* in *The Shapley Value: Essays in Honor of Lloyd S. Shapley* 121 (A. Roth ed. 1988)).[337] *See also* Gans WDT ¶ 64 (''The Shapley value approach . . . models bargaining processes in a free market by considering all the ways each party to a bargain would add value by agreeing to the bargain and then assigns to each party their average contribution to the cooperative bargain.''); Marx WDT ¶ 144 (''The idea of the Shapley value is that each party should pay according to its average contribution to cost or be paid according to its average contribution to value. It embodies a notion of fairness.''); Watt WRT ¶ 23 (''The Shapley model is a game theory model that is ultimately designed to model the outcome in a hypothetical ''fair'' market environment. It is closely aligned to bargaining models, when all bargainers are on an equal footing in the process.'').

In the parties' direct cases, on behalf of the Services, Professor Marx constructed a Shapley model. On behalf of Copyright Owners, Professor Gans developed what he described as a ''Shapley-inspired'' approach. In rebuttal to Professor Marx's Shapley value model, Copyright Owners, through the testimony of Professor Watt, criticized Professor Marx's analysis, and made adjustments to her model.

### 1. The Parties' Shapley Value Evidence and Testimony

#### a. Shapley Values

A Shapley value approach requires the economic modeler to identify downstream revenues available for division among the parties. The economic modeler must also input each provider's costs, which each must recover out of downstream revenues, in order to identify the residue, *i.e.,* the Shapley ''surplus,'' available for division among the parties. As such, the Shapley approach is cost-based, in the same general manner as a public utility-style rate-setting process identifies a utility's costs that must be recovered before an appropriate rate of return can be set.[338] In the present case, Copyright Owners and the Services have applied this general approach in different ways, and each challenges the appropriateness of the other's model.

To summarize the differences in their approaches, Professor Marx utilizes a Shapley value approach that *purposely alters the actual market structure* in order to obtain results that *intentionally deviate* from the market-based distribution of profits—in order to determine rates she identifies as reflecting a ''fair'' division of the surplus (Factor B) and recompense for the parties' relative roles (Factor C).

By contrast, Professor Watt's ''correction'' of Professor Marx's model rejects her alteration of the market structure to achieve such a result. Rather, he maintains that the incorporation of ''all potential orders of the players'' in her model—as in *all* Shapley models—*already adjusts for the hold-out power of any input provider who might threaten to walk away from a transaction.*

Professor Gans, like Professor Watt, does not attempt to alter the market structure. However, Professor Gans also does not attempt to construct Shapley values from the ground up. Rather, he takes *as a given* Dr. Eisenach's estimation that record companies receive a royalty of $[REDACTED] per play from interactive streaming services. Because Professor Gans identifies musical works and sound recordings as perfect complements, he assumes that the musical works licensors would receive the same profit as the record companies (but not the same royalty rate, given their different costs). Because this is not a Shapley value ground-up

[333] These dimensions are: ''creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication.'' *Id.*

[334] Public utility-style regulation—especially in 1967 when Mr. Nathan was testifying—was classic ''rate-of-return'' regulation. Essentially, the regulator would identify the utility's costs, determine the value of invested capital, ascertain an appropriate rate of return on such capital, and, then, establish the rate (or rates) charged to customers (or to different customers), in order to provide the utility with revenue that covers its costs and provides a ''reasonable rate of return.'' *See generally* C. Decker, *Modern Economic Regulation* at 104 (2014).

[335] The economic experts for Copyright Owners and the Services acknowledge that microeconomic principles (pre-Shapley values) do not provide insights as to what constitutes ''fairness.'' *See, e.g.,* 3/30/17 Tr. 3991 (Gans) (''fairness . . . is not a topic that is sitting in an economics textbook somewhere.''); 3/20/17 Tr. 1830 (Marx) (''Fairness is not a notion that has a unique definition within economics.''); 1128–29 (Leonard) (''economists . . . typically don't do 'fair' ''); 4/13/17 Tr. 5919 (Hubbard) (Economists aren't philosophers. I can't go to the biggest picture meaning of ''fair''. . . .). Rather, economists attempt to identify *ex ante* ''fairness'' by identifying fair *processes* in the workings of and structure of markets and bargaining, and in the *efficiency of outcomes* generated by these processes, although their understanding of what constitutes a fair ''process'' varies. *See, e.g.* 3/13/17 Tr. 555 (Katz) (''[T]he most useful or practical way of thinking about it here was really to focus on whether the process is fair'' . . . [and] a conception that's often used in economics is that a process is fair if it's . . . competitive or the outcome of a competitive market. A competitive bargaining process is fair. And so that's the—the central notion of fairness that I used here.''); 3/15/17 Tr. 1129 (Leonard) (''My concept of fair . . . and what I think a lot of economists would say is that if you have . . . a negotiation between two parties and there are no . . . constraints such as holdup . . . and there's no market power . . . again I hesitate to use the word, so maybe I'll put it in quotes, would be [']fair['].''); Eisenach WDT ¶ 24 (''a rate set at the fair market value by definition provides fair returns and incomes to both the licensee and licensor.'')

[336] Dr. Lloyd Shapley won a Nobel Memorial Prize in economics for this work. The Shapley approach represents a method for identifying fair outcomes, previously unaddressed in microeconomics. Mr. Nathan did not reference the potential use of the Shapley value approach in his 1967 testimony, perhaps because this methodology, although developed by Lloyd Shapley in 1953, was not yet widespread in the economic literature.

[337] The parties' economic expert witnesses find that these Factors B and C are properly considered jointly in the present proceeding, and I agree. *See* Marx WDT ¶ ¶ 11–2 (the Shapley value . . . operationalizes the concept of fair return based on relative contributions.''); Watt WRT ¶ 22 (''the Shapley model is a very appropriate methodology for finding a rate that satisfies factors B and C of 801(b)''); *see also* Gans WDT ¶ ¶ 65 n. 35, 67 (noting the Shapley approach provides for a ''fair allocation'' as among input suppliers to reflect ''the contributions made by each party.'')

[338] Unlike in public utility regulation, the Shapley value method considers the costs of all input providers whose returns will be determined. In traditional public utility rate regulation, the utility is a monopoly and thus the only provider of a regulated service.

approach (which would entail estimating the input costs of *all three input providers*—the record companies, the music publishers *and* the interactive streaming services—Professor Gans candidly acknowledged on cross-examination that he did not perform a full-fledged Shapley value analysis; hence he describes his methodology as a ''Shapley-inspired'' approach. 3/30/17 Tr. 4109 (Gans) ([Q]: ''[Y]ou do, is it fair to say, a Shapley-inspired analysis, if it wasn't a Shapley model?'' [PROFESSOR GANS]: ''That's fair enough.'').

**b. Professor Marx's Shapley Value Approach**

Professor Marx testified that, as an initial matter ''[t]he Shapley value depends upon how [the modeler] delineate[s] the entities contributing to a particular outcome.'' Marx WDT ¶ 145. More particularly, Professor Marx delineated the entities in a manner that was ''not putting in market power into the model.'' 3/20/17 Tr. 1862–63 (Marx). That is, she modeled the downstream interactive streaming services as a combined single service (and she added to her model ''other distribution types as another form of downstream distribution to account for the potential opportunity cost (''cannibalization'') of interactive streaming). By modeling the downstream market in this manner, Professor Marx artificially—but *intentionally*—treated the *multiple* interactive streaming services as a *single* service, a treatment used as a device (or artifact) to countervail the allegedly real market power of the collectives (the music publishers and the record companies respectively) that owned the other inputs—a market power that Professor Marx concluded must be removed (*i.e.,* offset) to establish a *fair* division of the surplus and a fair rate. *See* 3/20/17 Tr. 1865, 1907 (Marx) (''[M]y goal is to model a fair market, where there [are] no obvious asymmetries in market power upstream versus down. So I viewed it as appropriate to view interactive streaming as one player.'').

With regard to the upstream market of copyright holders, Professor Marx utilized two separate approaches. In her self-described ''baseline'' approach, she ''treat[ed] rights holders as one upstream entity, reflecting the broad overlap in ownership between publishers and record labels.'' Marx WDT ¶ ¶ 146, 162. In her ''alternative'' approach, she ungrouped the two collectivized copyright holders—the songwriters/publishers, on the one hand, and the recording artists/record companies, on the other. *Id.* The two purposes of her alternative approach were: (1) to separately allocate surplus and indicate rates for musical works (the subject of this proceeding); and (2) to illuminate the additional ''bargaining power'' of each category of copyright holder when these two categories of necessary complements arrive separately in the input market under the Shapley methodology. 3/20/17 Tr. 1883–84 (Marx). Each of Professor Marx's Shapley value approached is considered in more detail *infra.*

**i. Professor Marx's Baseline Approach**

Professor Marx noted the undisputed principle that ''[t]he calculation of the Shapley value depends on the total value created by all the entities together and the values created by each possible subset of entities.'' Marx WDT ¶ 147. Equally undisputed is the understanding that ''[t]hese values are functions of the associated revenue and costs.'' *Id.*

The surplus to be divided (from which rates can be derived) is realized at the downstream end of the distribution chain when revenues are received from retail consumers. That surplus can be measured as the profits of the downstream streaming services (and the alternative services in her model), *i.e.,* their ''revenue minus . . . non-content costs.'' [339] The *total combined* value created by the delivery of the sound recordings through the interactive (and substitutional) streaming services consists of: (1) the aforementioned profits downstream (*i.e.,* service revenue − non-content cost) *minus* (2) ''the copyright owners' non-content costs. Simply put, ''surplus'' reflects the amount of retail revenue that the input providers can split among themselves after their non-content costs (*i.e.,* the costs they do not simply pay to each other) have been recovered.

Thus, any Shapley value calculation requires data to estimate costs and revenues. In her Shapley analysis, Professor Marx relied on 2015 data from Warner/Chappell for her music publisher non-content cost data and its ownership-affiliated record company, Warner Music Group, for record company non-content costs. She was limited to this data set for non-content costs because among all major holders of musical works and sound recording copyrights ''only Warner . . . breaks down its cost by geographic region and by source in enough detail to estimate the amounts needed.'' Marx WDT ¶ ¶ 149–50. Utilizing this Warner cost data and extrapolating to the entire industry, Professor Marx estimated that ''Musical Work Copyright Holders' Total Non-Content Costs'' equaled $424 million; and ''Sound Recording Copyright Holders' Total non-content costs equaled $2.605 billion (more than six times copyright Holders' non-content costs), summing to total upstream non-content costs of $3.028 billion. *Id.* ¶ 150, Fig. 26.

Turning to the downstream distribution outlets, Professor Marx identified and relied on Spotify's 2015 revenue and cost data from for interactive streaming services, and for the alternative distribution modes, she relied on Pandora's and Sirius XM's revenue and cost data. *Id.* ¶ 152 and nn.149–152. Using that data, Professor Marx estimated interactive streaming revenue of $[REDACTED]; and (2) interactive streaming profit of $[REDACTED]. For the alternative distributors (Pandora and Sirius XM), she estimated (1) revenues of $8.514 billion; and (2) profits of $3.576 billion. The total downstream revenue, according to Professor Marx, equaled an estimated $10.118 billion. *Id.* ¶ 153 & Fig. 27.

Professor Marx noted that there would be some degree of substitution between interactive streaming services and alternative distribution channels (*e.g.,* non-interactive internet radio and satellite radio). *Id.* ¶ 154. She opined that ''it is difficult to determine the exact value of this substitution effect,'' so she reported a range of Shapley value calculations that corresponded to ''a range of possible substitution effects.'' *Id.*

These data were all inputs into the Shapley algorithm, *i.e.,* assigning value to each input provider for each potential order of arrival among these categories of providers to the market. The multiple values were summed and averaged as required by the Shapley methodology to arrive at the ''Shapley value,'' which as explained *supra,* accounts for each entity's revenues and (non-content) costs under each possible ordering of market-arrivals.

Based on the foregoing, Professor Marx estimated that the total royalty payment due from the interactive streaming services to the Copyright Owners would range from $[REDACTED] to $[REDACTED], based on varying assumptions as to the substitution between interactive services and substitute delivery

[339] Content costs, as opposed to non-content costs, are not deducted because the content costs comprise the surplus to be allocated in terms of royalties paid and residual (if any) that remains with the interactive streaming (and substitute) services. The non-content costs, as discussed *infra,* must be recovered by each input provider as part of its Shapley value, because entities must recover costs.

channels. This range of dollar-based revenues reflected a ''percentage of revenue'' paid by interactive streaming services *to all copyright holders* (musical works and sound recordings) ranging from [REDACTED]% to [REDACTED]%. *Id.* ¶ ¶ 159–160. Professor Marx then noted that this is well below the combined royalty rate of [REDACTED]% paid by Spotify for musical works and sound recording rights, indicating that the actual combined royalty payments are clearly too high. *Id.* ¶ 161.[340]

**ii. Professor Marx's Alternative Approach**

As noted *supra,* Professor Marx also performed an ''alternative'' Shapley value in which (as opposed to her baseline approach) she modeled the upstream market as *two* entities: ''a representative copyright holder for musical works and a representative copyright holder for sound recordings.'' *Id.* ¶ 163. (That change enlarged the number of ''arrival'' orderings to 24 (four factorial) but, in all other respects, Professor Marx's methodology was the same as her methodology in her initial approach. *See id.* ¶ 199, App. B).

Under this alternative approach with two owners of collective copyrights upstream (musical works owners and sound recording owners), interactive streaming's total royalty payments range from [REDACTED]% to [REDACTED]% of streaming revenue. *Id.* (Sound recording copyright holders' total royalty income under this alternative approach ranged from [REDACTED]% to [REDACTED]% of revenue. *Id.* Professor Marx explained that this higher range of combined royalties (as a percentage) in her alternative approach arose from the fact that splitting the copyright holders into two creates two ''must-haves'' providing each upstream entity with more ''market power and consequently higher payoffs than the baseline calculation.'' *Id.* ¶ 164, n.153. By splitting the upstream licensors into two categories (record companies and musical works licensors), Professor Marx calculated that ''musical work copyright holders' total royalty income as a percentage of revenue ranges from [REDACTED]% to [REDACTED]%.'' *Id.* ¶ 163. By way of comparison, Spotify actually pays [REDACTED]% of its revenue for musical works royalties (*i.e.,* ''All-In'' royalties). Accordingly, Professor Marx concludes that ''[b]ecause this proceeding is about mechanical rates, the fairness component of 801(b) factors suggests that interactive streaming's mechanical rates should be reduced from their current level.'' *Id.* ¶ 161.

**iii. Discussion of Professor Marx's Shapley Value Approach and the Criticisms of the Copyright Owners' Witnesses**

Copyright Owners criticize Professor Marx's model for ''failing to accurately reflect realities of the market, where current observed market rates for sound recording royalties alone are approximately [REDACTED]% of service revenue. *See* Watt WRT ¶ 23; *Written Rebuttal Testimony of Joshua Gans on Behalf of Copyright Owners* ¶ ¶ 19, 28 (Gans WRT); *see also* COPFF ¶ 741. More technically, Copyright Owners object to Professor Marx's joinder of the sound recording and musical works rightsholders as a single upstream entity in her ''baseline'' model, which had the undisputed effect of lowering Shapley values, and hence royalties, available to be divided between the two categories of rightsholders. Gans WRT ¶ 21; Watt WRT App. 3 at 2) (noting that in the real world, as opposed to the stylized Shapley-world, the institutional structure is such that the two would not *jointly* negotiate with licensees); *see also* COPFF ¶ 742. Even more particularly, Professor Gans questions Professor Marx's rationale for her joint negotiation assumption, *viz.,* the' overlapping ownership interests of record companies and music publishers. Gans WRT ¶ 21.

I find this criticism of Professor Marx's baseline approach to be appropriate, in that it was not *necessary* to combine the two rightsholders in a Shapley analysis. As Professor Watt explained in his separate criticism, there is no need to collapse the rightsholders into a single bargaining entity to eliminate holdout power by the respective rightsholders, because the ''heart and soul'' of the Shapley value excludes the holdout value that any input supplier could exploit in an actual bargain. 3/27/17 Tr. 3073 (Watt). More particularly, Professor Watt explains:

> The model . . . allows us to capture a player's necessity [and] bargaining power, including vetoes, holdouts, everything . . . that's actually in the market. It allows us to import all of that into a model that generates a fair reflection upon each player of what they actually do without any abuse of . . . any power that they may have.

*Id.* at 3058–59. He emphasizes that, because the Shapley approach incorporates all possible ''arrivals'' of input suppliers, it eliminates from the valuation and allocation exercise the effect of an essential input supplier holding out every time or arriving simultaneously with another input supplier (or apparently creating Cournot Complement inefficiencies). *Id.* at 3069–70.

However, the foregoing criticism does not pertain to Professor Marx's *second* Shapley value model—her ''Alternative'' model—in which she maintains the two separate rightsholders for musical works and sound recordings. Marx WDT ¶ 146, n.153; 3/20/17 Tr. 1871–72 (Marx). With regard to this Alternative model, Copyright Owners level a more general criticism of Professor Marx's approach that does pertain to this model (as well as her Baseline model). They assert, through both Professors Gans and Watt, that Professor Marx wrongly distorted the actual market in yet another manner—by assuming the existence of only one interactive streaming service—rather than the presence of competing interactive streaming services. Watt WRT ¶ ¶ 25, 32 n.19, 17; Gans WRT ¶ ¶ 55–56; see *also* COPFF ¶ 755. By this change, they argue, Professor Marx inflated the Shapley surplus attributable to the interactive streaming services compared to the actual proportion they would receive in the market.

According to Professor Gans, this simplified assumption belies the fact that the market is replete with many substitutable interactive streaming services, whose competition *inter se* reduces each service's bargaining power. The problem, he opines, is that to the extent the entities being combined are substitutes for one another—such as alternative music services—then combining them ignores the effects of competition between them, thereby inflating their combined share of surplus from the joint enterprise (*i.e.* their Shapley value). Gans WRT ¶ 21.

Professor Marx does not deny that she intentionally elevated the market power of the services by combining them in the model as a single represent agent. However, as noted *supra,* she explained that she made this adjustment to offset the concentrated market power that the rightsholders possess—separate and apart from any holdout power they might have (which, as noted by Professor Watt, is addressed by the Shapley ordering algorithm). Thus, her alteration of market power apparently was designed to address an issue—market power—that the Shapley value approach does not address. 3/20/17 Tr.

[340] Because her baseline approach combines sound recording and musical works licensors into a single entity, Professor Marx does not break out separate royalties for musical works or mechanical licenses. However, she recommends that the mechanical rate should be lowered based on this finding. Professor Marx does specifically estimate the musical works rate under her Alternative approach, as discussed *infra.*

1863 (Marx) (''I want a model that represents a fair outcome in the absence of market power, so I am going to have to be careful about how I construct the model that I am not putting in market power into the model.'').

Although at first blush it would seem more appropriate for Professor Marx to have *directly* adjusted the copyright holders' market power by breaking them up into several entities each with less bargaining power, such an approach would have made Shapley modeling less tractable (by increasing the number of arrival alternatives in the algorithm), compared with the practicality of equalizing market power by inflating the power of the streaming services (by reducing them to a single representative agent).[341]

Professor Gans testified that (regardless of how Professor Marx sought to equalize market power) her approach was erroneous because Shapley values are meant to incorporate market power asymmetries, not to eliminate them. Gans WRT ¶ 31 (noting Shapley values incorporate market power asymmetries). However, I note that Professor Gans acknowledged that in an Australian legal proceeding, he too combined multiple downstream entities into a single entity in his Shapley value approach in ''comparison'' to two upstream rightsholders. 3/30/17 Tr. 4179 (Gans). Additionally, Professor Watt has authored and published an article (cited at Gans WDT ¶ 65, n.36) in which he too ''artificially'' equalized market power between rightsholders and licenses (radio stations) in the same manner. *See* R. Watt, *Fair Copyright Remuneration: The Case of Music Radio,* 7, 25, 35 (2010) 7 Rev. of Econ. Res. on Copyright Issues 21, 25, 35 (2010) (''artificially'' modeling the ''demand side of the market as a single unit, rather than individual radio stations . . . thereby . . . add[ing] (notionally) monopsony power to the demand side'' to offset the monopoly power of the input supplier).

In essence, the import of this criticism is actually not about the faithfulness of Professor Marx's approach to the Shapley Value model. Rather, the salience of this critique pertains to her decision to include within her ''fair income/return'' and ''relative contribution'' analysis of Factors B and C an *adjustment for market power asymmetry* that seeks to equalize market power as between Copyright Owners and the streaming services. In this regard, her adjustment is consistent with testimony by Professor Katz, who cautioned that the Shapley value approach takes the parties' market power as a given, locking-in whatever disparities exist. 4/15/15 Tr. 4992–93 (Katz).

I agree with Professor Watt and find that the Shapley value approach inherently eliminates the ''hold-out'' problem that would otherwise cause a rate to be unreasonable, in that it would fail to reflect effective (or workable) competition. However, Professor Marx's Shapley value approach attempts to eliminate *a separate factor—market power*—that she asserts renders a market-based Shapley approach incompatible with the objectives of Factors Band C of section 801(b)(1). Strictly speaking, this issue does not raise the question of which approach is more consistent with the traditional Shapley value approach, but rather, as Professor Marx noted, whether the modeler should equalize market power in this particular context in order to satisfy these two statutory objectives. *See also* 3/27/17 Tr. 3126–27 (Watt) (indicating that a market rate ''might reflect'' both existing market power and ''abuse of monopoly power,'' the latter in the form of ''hold-out'' behavior, but the Shapley Value approach will eliminate the ''*abuse* of monopoly power.'').[342]

In the present case, the issue of market power, as it relates to the fairness of the rates and their reflection of the parties' relative roles and contributions, pertains in large measure to the power of the rightsholders derived from their status as *collectives.* As noted *supra,* music publishing is highly concentrated among a few large publishers. (As also noted *supra,* the major record companies likewise control significant percentages of the market.) These large entities provide the efficiencies of a collective, performing the salutary service of minimizing licensing transaction costs. However, a by-product of collectives is the concentration of pricing power. This is why, for example, the performing rights societies, ASCAP and BMI, operate under consent decrees that limit their receipt of royalty rates reflective of their market power. *See* R. Epstein, *Antitrust Consent Decrees* at 31(2007) (noting that a collective representing numerous musical works can be understood as ''all potential competitors in the market banded together . . . who will sell their goods—at above-competitive prices.'').

Professor Marx's adjustment for market power, like Professor Watt's adjustment as noted in his article (and like Professor Gans's adjustment in his Shapley approach in the aforementioned Australian proceeding), ameliorates this collective pricing power. In that sense, the adjustment renders the Shapley value more representative of ''fairness'' and ''relative contributions.'' In the process, the baby is not thrown out with the bathwater, so to speak, because the lower transaction costs achieved by the collectives are inputs in the Shapley model, thereby enlarging the surplus available for sharing among all input suppliers. (That is, if the songwriters were disaggregated (''uncollectivized'') and required to bargain separately with each interactive streaming service, transaction costs would be higher, if not disabling.)

Professor Marx's adjustment thus mitigates the collective market power of music publishers, yet retains the lower transaction costs incurred by rightsholders. In this approach, I detect a clear and modern echo of the ''public utility'' rate regulation history that was the foundation for Factors B and C of section 801(b)(1). The goal of such rate regulation has been to maintain the efficient cost structure of the utility (*i.e.,* its low average costs), while ameliorating the ability of sellers to use their concentrated market power to earn

[341] For example, in Professor Marx's ''alternative'' Shapley model, she models four entities, two upstream (musical works holders and sound recording holders), and two downstream (the representative single streaming service and a single alternate distribution outlet). With these four entities, the number of different arrival orders is 4!, or 24. If Professor Marx instead had broken the musical works copyright holders and the sound recording copyright holders respectively into two entities, the number of total entities would have increased from 4 to 6. The number of arrival orders would then have increased from 24 to 720.

[342] At the hearing, Professor Watt was confronted on cross-examination with his published article stating that the Shapley value eliminates ''market power.'' As the foregoing analysis indicates, though, the Shapley value incorporates whatever market power exists (unless otherwise adjusted). Professor Watt testified that his language in this regard was ''poorly worded'' and that he intended to state that the Shapley value eliminates the ''*abuse* of market power,'' by which he meant the ability of ''must have'' suppliers to ''hold out'' and refuse (or threaten to refuse) to negotiate. 3/27/17 Tr. 3131–33, 3148 (Watt). The Judges find, considering the totality of Professor Watt's testimony and writings, that he indeed intended to refer to ''abuse of market power'' in his prior writing. This seems clear because he has consistently expressed the opinion that the Shapley value *does* prevent the exploitation of complementary oligopoly (must have/hold out) power, through its inclusion of all ''arrival orderings'' in its algorithm. However, his writings (like Professor Gans's prior work with which he was confronted on cross-examination) demonstrate that the Shapley value approach *may* be applied by adjusting the number of licensors or licensees to change any existing market power disparities. This is fully consistent with Professor Marx's testimony that the extent of market power remains a choice for the Shapley modeler, and Professor Katz's testimony that a Shapley value that makes no such adjustment simply takes as given any disparity in market power that actually exists.

supranormal profits. *See Decker, supra,* (public utility rate of return regulation is intended to allow the regulated entity to recover its costs and a ''fair rate of return''). Professor Marx's market power adjustment provides a form of market power mitigation, while still incorporating the higher surplus emanating from the more efficient cost structure of collectivized licenses.[343]

iv. Application of Professor Marx's Shapley Value Analysis in this Proceeding

Consideration of whether to apply Professor Marx's Shapley value model requires the placement of her modeling *in the proper context of other evidence in this proceeding.* More particularly, her Shapley value methodology must be compared with the process that led to the creation of the 2012 rate structure. *This comparison demonstrates that the Judges should not make any adjustment to the reasonable rates they have determined in this proceeding through an application of the Shapley value analyses.*[344]

The 2012 rate structure (for subparts B and C) was the product of an *industrywide* negotiation, with the music publishers represented by the NMPA and the interactive streaming services represented by DiMA, their respective trade associations, continuing the 2008 industrywide settlement rate structure for subpart B. (Although individual entities also participated, the settlement was industrywide.) *When such a settlement occurs, it contains the same benefits with regard to the avoidance of the ''hold-out'' effect and the equalizing of bargaining power as produced by Professor Marx's Shapley value modeling. See* 3/13/17 Tr. 577 (Katz) (''I think of the shadow as balancing the bargaining power between the two parties.''); Katz CWRT 136, n.236 (''there are market forces that promote the achievement of the statutory objectives in private agreements, such as the 2012 Settlement, when the parties are equally matched (it was an industry-wide negotiation) and the negotiations are conducted in the shadow of a pending rate-setting proceeding that can be expected to set reasonable rates in the event that the private parties do not reach agreement.''). Accordingly, any attempt by me to use Professor Marx's Shapley modeling approach, after I have accepted the appropriateness of the present rate structure and rates as benchmarks, would constitute an inappropriate form of double-counting.

The Judges came to a similar analytical conclusion with regard to analogous private agreements in *Web III (on remand),* where they adopted as benchmarks two settlements between SoundExchange (as the negotiating and settling agent for the record company licensors), and respectively, the National Association of Broadcasters (NAB) and Sirius XM. *Determination of Royalty Rates for Digital Performance Right in Sound Recordings and Ephemeral Recordings,* 79 FR 23102 (Apr. 25, 2014). There (although Shapley values were not in evidence), the Judges found that

> SoundExchange, as a collective, would internalize the impact of the complementary nature of the repertoires on industry revenue and thus seek to maximize that overall revenue. This would result in lower overall rates compared to the situation in which the individual record companies negotiated separately. . . .
>
> The . . . power of SoundExchange was compromised by the fact that the NAB . . . could have chosen instead to be subject to the rates to be set by the Judges . . . which would be free of any potential cartel effects—rather than voluntarily agree to pay above-market rates.

*Id.* at 23114 (emphasis added). In those settlements, the licensees likely were represented by, respectively, a trade association (NAB), and the entire licensee-side of the relevant market (Sirius XM). Thus, the Judges have previously acknowledged a similar removal of the ''abuse of market power'' (arising from complementarity) as in a Shapley value analysis, when the licensors are jointly represented in negotiations by a common agent.

Further, because the 2012 settlement was industrywide, with both sides represented by (*inter alia*) their respective trade associations; there was no apparent imbalance of market power in the negotiating process (such as the imbalance that Professor Marx attempted to eliminate by equalizing the number of Shapley-participants on each side of the bargain). In this regard, in *Web III (on remand),* the Judges also found that these settlement agreements—with the ''shadow'' of a statutory license looming over the negotiations—avoided the same market power imbalance that Professor Marx seeks to eliminate in her Shapley modeling equalizing the number of licensors and interactive streaming services. Specifically, in *Web III (on remand),* the Judges held:

> [T]he NAB, which negotiated on behalf of a group of broadcasters, enjoyed a degree of bargaining power on the buyers' side during its negotiations with SoundExchange. . . . . [S]uch added market power on the buyer side tends to mitigate, if not fully offset, additional leverage that SoundExchange might bring to the negotiations. . . . The question of competition is not confined to an examination of the seller's side of the market alone. Rather, it is concerned with whether market prices can be unduly influenced by sellers' power or buyers' power in the market.

*Id.* Thus, the Judges have previously recognized that a negotiated agreement between industrywide representatives—when a failure to agree will trigger a statutory rate proceeding—will: (1) ameliorate the complementary oligopolists' ''abuse of power'' arising from the threat to withhold a ''must have'' license; and (2) reflect countervailing licensee power that neutralizes the monopoly power of a licensor-collective.

*Web III,* as a prior determination by this body, thus underscores the redundancy of a Shapley value adjustment in such a context.[345] [346] Further, absent any valid reason to the contrary, the Judges have a statutory

[343] To be clear, although I find such a market power adjustment a relevant consideration in a section 801(b)(1) Factor B and C analysis, it is not a consideration when determining only a rate that reflects ''effective competition.'' An effectively competitive rate need not adjust for such market power, because such a rate (as also set under the willing buyer/willing seller standard of 17 U.S.C. 14(f)(2)(B)) does not include consideration of these two factors or their public utility style legislative history antecedents. Alternately stated, the Shapley value approach, without any adjustments for market power, eliminates only the complementary oligopoly (''must have'') effect, through its use of all ''arrival orderings,'' indicating the outcome of an effectively competitive market, but does not necessarily address the Factor B and C objectives.

[344] Professor Marx estimated a Shapley-derived rate of [REDACTED]% to [REDACTED]%. Marx WDT ¶ 163 & App. B. This rate range brackets the ''headline'' 10.5% rate in the 2012 benchmark but is [REDACTED] pursuant to the 2012 benchmark structure. However, I note that Professor Marx testified that the mechanical rate she derived in her Alternate Shapley approach was not intended to be precise, but rather indicative of a range and direction for the Judges to consider. 4/7/17 Tr. 5576 (Marx) (the Factor B and C Shapley Value analysis points in the ''direction'' of rates ''moving slightly lower'' within the existing rate structure).

[345] Of course, the parties in the present proceeding could not know in advance that the Judges would determine a rate structure incorporating these principles, and their Shapley analyses thus were proffered given that uncertainty.

[346] Professors Watt and Gans also criticize Professor Marx's selection of data as inputs in her Shapley model. In fact, Professor Gans testified that his re-working of Professor Marx's model through the use of different data alone accounted for the bulk of his increase (''the lion's share'') of the surplus attributable to rights holders. However, in his written testimony, he did not separately quantify the impact of Professor Marx's attempts to equalize market power by reducing the number of streaming services. 3/30/17 Tr. 4057, 4119 (Gans). Because I find that Professor Marx's Shapley value model would be redundant given the rate structure analysis undertaken, for the reasons stated in the text, *supra,* these data input disputes are moot. Of course, if one were to apply the Shapley values in this proceeding (as the majority does), each party's criticisms of the sufficiency of the other's data sets would need to be carefully scrutinized.

duty to act in accordance with their prior determinations. 17 U.S.C. 803(a)(1).[347]

**c. Professor Gans's ''Shapley-Inspired Approach''**

On behalf of Copyright Owners, Professor Gans presented a model that he described as ''inspired'' by the Shapley value approach, and thus not *per se* a Shapley value approach. 3/30/17 Tr. 4109 (Gans). At a high level, his Shapley-inspired approach attempted to determine the ratio of sound recording royalties to musical works royalties that would prevail in an unconstrained market. After calculating that ratio, he estimated what publisher mechanical royalty rates would be in a market without compulsory licensing by multiplying the benchmark sound recording rates by this ratio. Gans WDT ¶ 63.

Professor Gans begins his analysis by making two critical assumptions: (1) publishers and record companies must have equal Shapley values (*i.e.,* they must each recover from total surplus equal profits), because musical compositions and sound recording performances are perfect complements and essential components of the streamed performance; and (2) the label profits from interactive streaming services are used as benchmark Shapley values. Gans WDT ¶ 77. The royalties that result will differ, given the different level of costs incurred by music publishers and record companies respectively. Gans WDT ¶ ¶ 23, 71, 74, 76; Gans WRT ¶ ¶ 15–17; *see also* 3/30/17 Tr. 3989 (Gans).

Echoing Dr. Eisenach, Professor Gans found these assumptions critical because agreements between record companies and interactive streaming services are freely negotiated, *i.e.,* they are not set by any regulatory body or formally subject to an ongoing judicial consent decree and, accordingly, are also not subject to any regulatory or judicial ''shadow'' that arguably might be cast from such governmental regulation in the market. Professor Gans therefore uses the profits arising from these unregulated market transactions to estimate what the mechanical rate for publishers would be if they too were also able to freely negotiate the rates for the licensing of their works. Gans WDT ¶ 75.

In light of his decision to *assume* this equality in upstream Shapley values, Professor Gans also coined the phrase ''top-down'' approach to describe his approach, as distinguished from Professor Marx's approach which—again coining a phrase—he labeled a '''bottom-up'' approach. Gans WDT ¶ 77. Moreover, as Professor Gans noted, an important distinction between the two approaches is that the bottom-up approach was ''really an exercise . . . in modeling the royalty rate as the result of a hypothetical bargain [whereas] [t]he top-down approach was to actually calculate this [b]enchmark I was worried about. Is this price [*i.e.,* the Copyright Owner's proposed rate] too high or not?'' 3/30/17 Tr. 4013–14 (Gans).

Professor Gans utilized data from projections in a Goldman Sachs analysis to identify the aggregate profits of the record companies and the music publishers, respectively. 3/30/17 Tr. 4017 (Gans). Given his assumption that sound recordings and musical works were both ''essential'' inputs and thus able to claim an equal share of the profits, Professor Gans posed the question: ''[H]ow much revenue do we need to hand to the publishers so that they end up earning the same profits as the labels?'' *Id.* at 4018.

He found that, for the music publishers to recover their costs and achieve profits commensurate with those of the record companies under his ''top down'' approach, the ratio of sound recording royalties to musical works royalties derived from his Shapley-inspired analysis was 2.5:1. (which attributes equal profits to both classes of rights holders and acknowledges the higher costs incurred by record companies compared to music publishers). Gans WDT ¶ 77, Table 3.

As noted, Professor Gans made a key assumption, treating as accurate Dr. Eisenach's calculation of an effective per play rate for sound recordings of $[REDACTED]. Given those two inputs (the 2.5:1 ratio and the $[REDACTED] per play rate), Professor Gans's approach indicated a market-derived musical works royalty rate of $[REDACTED] (rounded). *Id.* ¶ 78, Table 3. However, because the musical works royalty is comprised of the mechanical rate and the performance rate paid to PROs (not to publishers), this $[REDACTED] rate needed to be adjusted down. Accordingly, he subtracted the performance rate and determined that the percent of revenues attributable to mechanical royalties was 81% of the total musical works royalties, under his Shapley-inspired approach. Thus, he estimated a mechanical royalty rate of $[REDACTED] (rounded) (*i.e.,* [REDACTED] × [REDACTED]), Gans WDT ¶ 78, confirming, in his opinion, the reasonableness of Copyright Owners' proposed $0.0015 statutory per play rate.

On this basis, Professor Gans also concluded that his Shapley-inspired approach supports the Copyright Owners' per-user rate proposal. Applying the Shapley value based ratio of 2.5 to 1 to the benchmark per-user rate negotiated by the labels of %[REDACTED] per user per month, and after subtracting the value of the performance rights royalty, Professor Gans obtained an equivalent publisher mechanical rate of $[REDACTED] (rounded) per user per month. (*i.e.,* ([REDACTED]/2.5) × 80%).[348] Gans WDT ¶ 85.

**i. Services' Criticisms and Dissent's Analysis of Professor Gans's Approach**

I do not credit Professor Gans's Shapley-inspired model, *because of its assumption and use of the $[REDACTED] per play sound recording interactive rate.* As found *supra,* Dr. Eisenach's $[REDACTED] per play sound recording rate is not supported by the weight of the evidence. Therefore, Professor Gans's Shapley-inspired analysis is unpersuasive for that reason alone. More particularly, the record company profits are inflated by the inefficient rates created through the Cournot Complements ''hold out'' problem that impacts the agreements between record companies and streaming services, as noted by the Services' experts in this proceeding, and as the Judges noted in *Web IV.*

Professor Gans's model is also troubling because it begs two broad questions: (1) whether the model produces a ''reasonable'' rate as required by Sec. 801(b)(1); and (2) whether the model produces a rate that also adequately satisfies Factors B and C of section 801(b)(1). He testified as follows as to why he understands a Shapley-based methodology generally will provide an economic approach that satisfies the objectives of section 801(b)(1):

> [O]ne of the reasons why the Shapley analysis is useful is because these regulations have a fairness objective. I wasn't the only one—every economist I think you've asked about what they meant by fairness. It's—it's not a topic that is sitting in an economic

[347] If the Judges had considered the impact of the Shapley value analyses in the context of setting a reasonable rate—rather than as a separate consideration under Factors B and C—they would have reached the same result, given the countervailing power that exists between the settling parties.

[348] Professor Gans multiplies the per play rate by 81% but the per user rate by 80%. *Compare* Gans WDT ¶ 78 *with* Gans WDT ¶ 85. The rate derived by Professor Gans was the 80% figure. Gans WDT ¶ 77, Table 3, line 17. This discrepancy does not impact the relevance of his analysis or my findings.

textbook somewhere. But the way in which, you know, I viewed it turned out to be similar to others in that it means that if you contribute something of economic value that is very similar to what somebody else does in terms of economic value, you should be expecting them to get the same out of it in terms of what they get to take home.

Tr. 3/30/17 3991 (Gans). Thus, if (as Dr. Eisenach opines), there is an identity between a market rate and a reasonable (effectively competitive) rate that takes into account Factors B and C of section 801(b)(1), then Professor Gans's Shapley-inspired analysis would be useful (absent any other defects). Conversely, if there is no identity between a purely market-based rate and a reasonable (effectively competitive) rate that explicitly takes into account Factors B and C, then Professor Gans's model is not helpful in applying those statutory factors.

I find that Professor Gans's model fails to incorporate sufficiently the reasonableness requirements and the ''fairness'' and ''relative roles'' elements of section 801(b)(1). As explained *supra,* the concept of a ''reasonable'' rate reflects a market rate that is not distorted by a lack of effective competition. Here again, a key assumption made by Professor Gans, by his own admission, is that the $[REDACTED] per play rate estimated by Dr. Eisenach satisfies the statutory requirement of reasonableness. But, as discussed *supra,* Dr. Eisenach's calculation of the $[REDACTED] per play rate sound recording rate reflects the unregulated ''must have'' hold out power of the record companies. Thus, Professor Gans's Shapley-inspired approach has imported the record companies' ''must have'' hold out power, and therefore inserted the ''abuse of power'' that Professor Watt rightly identified as necessarily excluded from a full-fledged Shapley value approach. Although Professor Gans chose to describe his approach by coining the phrases ''Shapley-inspired'' and a '''top-down' Shapley,'' I find his borrowing of the Shapley moniker in this context to be somewhat Orwellian, and find his approach to be too dissimilar from a full-fledged Shapley approach to be of assistance in establishing a reasonable (effectively competitive) rate. *See* 3/30/17 Tr. 4107–09 (Gans) (acknowledging that the top down/bottom up dichotomy is of his own making and that the original work by Dr. Shapley ''is closer to a bottom-up approach'').

Professor Gans's Shapley-inspired approach also does not attempt to eliminate any *other market power that may be possessed by the music publishers.* As explained *supra* with regard to Professor Marx's model and the critiques thereto, a model that does not address the market power asymmetries of the parties (as Professor Gans expressly acknowledges his model does not) thus fails to address the concepts of fairness and relative roles/contributions required by Factors B and C. Thus, while Professor Marx's analysis is *redundant* of the market power adjustments reflected in the 2012 settlement, Professor Gans's Shapley-inspired approach *omits* such adjustments.

I also agree with Professor Marx's further criticism that Professor Gans's Shapley-inspired model is lacking in certain other important respects. Perhaps most importantly, he intentionally omits the streaming services from his model, because he is interested only in equating Copyright Owners' profits with those of the record companies. Professor Gans did not provide any convincing evidence to explain why the Judges should rely on a model that omits from consideration the very licensees who would be paying the royalties pursuant to a rate the model is intended to confirm. (I understand this omission by Professor Gans to be one reason why he described his model a ''top-down,'' Shapley ''inspired'' approach, as opposed to a full-fledged Shapley value model.). Consequently, Professor Gans's results provide for the streaming services to pay total royalties (sound recording and musical works) greater than their total revenue, leading to losses despite their undisputed contribution to the total surplus available for distribution. Marx WRT ¶ 184 (Professor Gans's Shapley-inspired calculation of a per-play musical works royalty rate of $0.0031, combined with the existing sound recording royalty rate, would cause Spotify to pay [REDACTED]% of its revenue in royalties).

Professor Gans apparently explains away these losses by the fact that the Services have been engaging in below market pricing to increase market share and such pricing shows up in their lower revenues. I address that issue elsewhere in this Determination. However, to the extent Professor Gans is correct in this regard, it shows the limits of a Shapley-inspired approach that, by definition, treats accounting costs and revenue inputs as relevant parameters. Further in that regard, it is important to note ''[t]hat the main problem with the Shapley approach . . . a particularly pressing problem [is] that of data availability.'' R. Watt, *Fair Copyright Remuneration: The Case of Music Radio,* 7 Rev. Econ. Rsch Copyright. Issues at 21, 27 (2010).[349]

Finally, one of the assumptions behind Professor Gans's approach is that musical works are as indispensable as sound recordings for purposes of a Shapley value approach. However, that assumption is subject to challenge. More particularly, I find merit in a further critique made by Dr. Leonard. He questioned the underlying assumption that musical works are ''essential inputs,'' or ''must haves,'' in the same way in which sound recordings are essential inputs/''must haves.''

As he explained, at the time a recording artist and a record company decide upon which song to record, they have numerous songs from which to choose. *No one song therefore is essential at the time in which the recording artist and the record company must select the song.* (The essentiality of the song may exist, as Copyright Owners note, in those instances when the songwriter himself or herself is of sufficient acclaim and notoriety.). It is only *after* a song has been incorporated into a recording that it has become essential. As Dr. Leonard notes, this point is analogous to the problem of ''hold up'' in the setting of royalties for patented inputs within a larger complex device. At an early stage of production, the device manufacturer has the opportunity to select among several competing patented inputs, but once one of them is selected, its uniqueness allows the owner of the input to demand a disproportionate share of the revenue in royalties, because, *ex post* selection, it *has become* ''essential.'' However, *ex ante* selection, it was not ''essential.'' Thus, the existing spread between musical works royalties and sound recording royalties, according to Dr. Leonard, may reflect this phenomenon, rather than simply an artificial regulatory diminution in the mechanical royalty rate. 4/5/17 Tr. 5185–87 (Leonard).

**d. Professor Watt's Shapley Approach and the ''See-Saw'' Effect**

As noted *supra,* Professor Watt appeared solely as a *rebuttal* witness. In that capacity, he testified as to purported defects in Professor Marx's Shapley modeling. In addition, he presented alternative modeling intended

[349] Because I do not apply the Shapley approaches to adjust the rates or to determine reasonableness, the parties' attacks on the usefulness of the other's data sets are moot. However, as noted *supra,* to the extent the Majority Opinion applies any of the Shapley approaches, it needed to address and resolve the issues of data reliability.

to apply an adjusted version of Professor Marx's Shapley value model.

Professor Watt agreed that the Shapley model is extremely well-suited to address Factors B and C within section 801(b)(1). 3/27/17 Tr. 3057 (Watt). He characterizes the Shapley model as an approach ''for analyzing complex strategic behavior in a very simple way.'' *Id.* at 3058. However, he found that Professor Marx's approaches contained several flaws and methodological issues. *Id.* at 3057. Accordingly, he, like Professor Gans, attempted to adjust her modeling in a manner that, in his opinion, generated ''decent, believable results.'' *Id.* at 3058.

Professor Watt criticized Professor Marx's alternative Shapley model, in which she treated sound recording and musical works as being owned by two distinct entities. 3/20/17 Tr. 1885 (Marx). In that alternative model, Professor Marx found that Spotify's total royalties for musical works and sound recordings combined would range from {REDACTED]% to [REDACTED]% of total royalties. *Id.*[350] That total indicated a payment of approximately [REDACTED]% to [REDACTED]% of total revenue for sound recording royalties. Although she understood that Spotify actually pays [REDACTED]% of its revenue in total for these royalties (*see id.* at 1860–61), she was not concerned by the difference, or by the reduction of royalties paid to record companies under her alternative Shapley model, because she ''wasn't trying to construct a model of the market as it is,'' but rather . . . a model that represents the allocation of surplus in a way that is fair and respects the relative contributions of the parties''. *Id.* at 188.

In his Shapley modeling adjusting Professor Marx's analysis, Professor Watt reached conclusions that were broadly consistent with her finding that *the ratio* of sound recording:musical works royalty rates should decline. Specifically, Professor Watt found that at least [REDACTED]% of interactive streaming revenue should be allocated to the rightsholders, and, of this [REDACTED] should be retained by the Musical Works copyright holders, *which equals [REDACTED]% (i.e., [REDACTED]) of total interactive streaming revenue.* As these calculations imply, the record companies would receive [REDACTED]% ([REDACTED]) of the [REDACTED]% of interactive streaming revenues allocated to the rightsholders. Thus, the *record companies would receive [REDACTED]% of total interactive streaming revenues ([REDACTED]).* Watt WRT ¶ 35; 3/27/17 Tr. 3083, 3115–16 (Watt).[351]

Professor Watt's ratio of 37.9%:29.1% equals 1.3:1, whereas Professor Marx's ratio (given the range she estimated) is [REDACTED], a ratio of [REDACTED]. Moreover, both of their ratios are well below the current ratio of approximately [REDACTED] for Spotify, and approximately [REDACTED] comparing the 10.5% headline rate to an average sound recording rate of approximately [REDACTED]% of revenue. Accordingly, under their Shapley value models, Professors Watt and Marx appear to be in general agreement that the ratio of sound recording:musical works royalties should decline. *However, Professor Watt's model indicates that this ratio reduction should occur via a significant increase in musical works royalties and an even greater precipitous decline in the sound recording royalties set in an unregulated market.* On the other hand, Professor Marx's model indicates that the ratio should narrow essentially through a dramatic reduction in sound recording royalties and an essentially stable musical works rate.

Professor Watt explains that the cause of the dramatically lower sound recording rates in his Shapley model is the existing regulation of musical works rates. Specifically, he opines:

> [The reason] my predicted fraction of revenues for sound recording royalties is significantly less than what is observed in the market [is] simple. The statutory rate for mechanical royalties in the United States is significantly below the predicted fair rate, and the statutory rate effectively removes the musical works rightsholders from the bargaining table with the services. Since this leaves the sound recording rightsholders as the only remaining essential input, bargaining theory tells us that they will successfully obtain most of the available surplus.

Watt WRT ¶ 36.[352] Professor Watt opines that, because the mechanical rate should rise, the sound recording rate therefore should fall—a phenomenon the parties have summarized as a ''see-saw'' effect. *See, e.g.,* 4/5//17 Tr. 5079–80:10 (Katz).[353]

However, no witness explained how this seesaw effect would occur, and there were no witnesses from the record companies who testified that the record companies would impotently acquiesce to a significant loss in royalties to accommodate the diversion of a huge economic surplus away from them and to the Copyright Owners.[354] Indeed, when the Judges inquired of Professor Watt how such an adjustment might occur, given existing contractual rates between the Services and record companies, he acknowledged that he had not thought of that problem until he was questioned by the Judges at the hearing, and he acknowledged that the timing of any adjustment might be disruptive. 3/27/17 Tr. 3091–92 (Watt).[355]

[350] Under her baseline Shapley value model, Professor Marx estimated combined royalty payments equaling [REDACTED]% to [REDACTED]% of total Spotify revenue. *Id.* at 1888. She could not break that range down into musical works and sound recording royalties because her baseline model treated both types of royalties as if they were paid to a single rightsholder.

[351] At present, record companies receive approximately 55% to 60% of total interactive streaming revenue, substantially higher than the 37.9% calculated by Professor Watt.

[352] More specifically, Professor Watt calculates that, for each dollar that the statutory rate holds down fair market musical works royalties, 95 cents is captured by the record companies (and 5 cents is captured by the streaming services). Watt WRT ¶ 23, n.13 & App. 3.

[353] Although it is noteworthy that Professor Gans does not anticipate such an effect, and instead speculates that the Services might simply pay the same sound recording royalty rate and the higher mechanical rate out of existing profits or through an increase in downstream prices. Gans WRT ¶ 32. The Judges find no evidence to support the speculation that the Services could engage in such substantial adjustments in the market.

[354] According to the RIAA, interactive streaming revenues for 2015 totaled $1.604 billion. *See* Marx WDT ¶ 153 & App. B.1.b (citing RIAA figures). *The assumption that the see-saw effect would induce record companies to surrender a significant amount of this revenue (which has been growing year-over-year as streaming becomes more popular), absent any evidence, makes the assumption of the see-saw effect speculative and unreasonable.*

[355] Copyright Owners argue that Professor Watt (as a non-lawyer) did not appreciate that contracts between record companies and interactive streaming services could be renegotiated at any time upon mutual agreement of those parties. See CORPFF–JS at 221–22 (and citations therein). While this legal point of course is correct, it does not address the economic uncertainty as to whether the record companies would be willing to renegotiate rates in a manner by which they concede a loss of royalty revenue as indicated by Professor Watt's anticipated see-saw effect.

I am loath to adopt the *hypothetically* plausible idea of a ''see-saw'' effect impacting the division of this surplus, when there is simply no evidence that such an adjustment would occur.[356] Given at least $[REDACTED] in interactive streaming revenue, if the record companies were to passively accept a reduction of royalties from approximately [REDACTED]% of that revenue, $[REDACTED], to Professor Watt's proposed 37.9%, *i.e.,* to $[REDACTED], they would lose (assuming no further growth in streaming) approximately $[REDACTED] annually, or $[REDACTED] over five years. The Judges cannot merely assume that the record companies would ''go quietly into that good night,'' rather than seek some other market structure in which to protect this revenue, such as, for example, resurrecting the idea of establishing or otherwise integrating their own streaming services. The Services' experts, and Apple's expert, testified that any purported see-saw effect was indeterminate with regard to its impact on the interactive streaming services. *See* 4/5/17 Tr. 4944–45 (Katz) (acknowledging the possibility that a mechanical royalty rate increase would affect sound recording royalties in the future but not immediately, and that there is no reliable estimate of the size of any such adjustment); 4/7/17 Tr. 5515–5516(Marx) ([REDACTED]); 4/5/17 Tr. 5704–05 (Ghose) (''[I]t's quite likely that the streaming service will want to maintain their royalties and their revenues at the current levels. And so, you know, to me it seems like an extreme statement that the entire increase in publisher profits will come at the expense of the streaming services.'').

In any event, from an evidentiary perspective, there is no need to indulge in such speculation. There is absolutely no evidence that such a significant shift in royalty distribution would occur, nor is there sufficient evidence as to the potential consequences of such a draconian reallocation of revenue.

In sum, my analysis of the Shapley approaches with regard to the elements of Factors B and C demonstrates (whether that analysis was undertaken as part of the ''reasonable rate'' analysis or as a separate ''factor'' analysis) that there is no basis to apply those elements to adjust the reasonable rates as set forth in the 2012 benchmark.

**D. Factor D**

The last itemized factor of section 801(b)(1), Factor D, directs the Judges ''to minimize any disruptive impact on the structure of the industries involved and on generally prevailing industry practices.'' 17 U.S.C. 801(b)(1)(D). In *Phonorecords I,* 74 FR at 4525, the Judges reiterated their understanding of Factor D, concluding that a rate would need adjustment under Factor D if that rate

> directly produces an adverse impact that is substantial, immediate and irreversible in the short-run because there is insufficient time for either [party] to adequately adapt to the changed circumstance produced by the rate change and, as a consequence, such adverse impacts threaten the viability of the music delivery service currently offered to consumers under this license.

*Id.* I adopt and apply in this Determination the same Factor D test as set forth above.

The Services are advocating broadly for essentially the same rate structure that now exists, except for the elimination of the Mechanical Floor. *See* SJPFF at 1. My proposed rate structure is consistent with that position, except that I would maintain the Mechanical Floor. I would also maintain the existing rates. Because this result would continue the existing structure and rates, neither the services nor Copyright Owners can reasonably complain of disruption under the standard quoted above. Indeed, a continuation of the present rate structure and rates reflects constancy rather than disruption.

More particularly, the fact that interactive streaming services are failing to realize an accounting profit under this structure does not demonstrate that the rate structure proposed would threaten their viability. As noted *supra,* such year-over-year accounting losses are consistent with a long-run competition *for* the market, during which losses can be endured as a cost of doing business. Indeed, the services remain in business despite the existence of chronic losses. In that regard, a financial expert engaged jointly by the Services testified that he was ''not aware of a single standalone digital music service that has sustained profitability to date,'' *Testimony of David B. Pakman* ¶ 23 (Pakman WDT), yet that lack of sustained profitability has not materially diminished the ranks of interactive streaming services nor dampened competition from new entrants into the market.

Moreover, the record indicates that the services are not as concerned with short-term rates as they are with long-term market share, or what the services call ''scaling,'' in their Schumpeterian competition *for* the market. This point was made clearly by [REDACTED] (emphasis added). Of course, [REDACTED]. Katz CWRT ¶ 204.

The point is well-recognized by Google as well. *See* Joyce WDT ¶ 20 ([REDACTED]) (emphasis added). This acknowledgement was echoed by one of Copyright Owners' economic expert witnesses, who explained that the services' competitive posture was typical of internet-based entities that accept short-term losses to build economies of scale through, for example, investing in customer loyalty. Rysman WDT ¶ 32.

Moreover, another expert economic witness for the Services, Dr. Leonard, candidly acknowledged that ''[a]n argument may be made that the services expect to be profitable eventually, otherwise they would go out of business and Spotify, for example, would not have positive market value.'' Leonard AWDT 101, n.153. Likewise, Pandora notes that it can ''achieve the growth it projects . . . *under a continuation of existing rates and terms* . . . .'' Pandora's Introductory Rebuttal Memorandum at 3 (emphasis added).

This inability of the services to become profitable will persist based on the record, under existing competitive conditions. As Mr. Pakman testified: [N]o current music subscription service—including marquee brands like Pandora, Spotify and Rhapsody—can ever be profitable, even if they execute perfectly . . . .'' Pakman WDT 23 n.5 (citation omitted). Although Mr. Pakman blames the lack of profitability (in part) on the level of mechanical royalties, *id.,* I find, based on the Services' own acknowledgement, that the lack of profitability is a function of

[356] As a matter of economic theory, *given the present interactive streaming market structure,* the record companies already have the economic power to put streaming services out of business, because the market in which record companies and interactive streaming services negotiate is unregulated. So, I recognize that—*given the present interactive streaming market structure*—the record companies apparently find it in their self-interest to maintain the presence of interactive licensees. Indeed, the evidence in *Web IV* revealed that the record companies' strategy has been to ''[REDACTED].'' *Web IV, supra,* at 63 (restricted version). However, if mechanical royalty rates were to increase to a level that significantly reduced the profits of the record companies from streaming, there is no evidence in the record in this proceeding that indicates whether the record companies would decide to maintain the current vertical structure of the market and docilely accept such a revenue loss. For example, they could create their own streaming services (perhaps learning the lessons from the failed Pressplay and MusicNet attempts of the past). Or, they could maintain the sound recording royalty rates, thereby hastening a more immediate exit of streaming services from the market. Although such an acceleration of exit might be the consequence in an unregulated market (fostering Schumpeterian competition for the holy grail of market scale), such a change would not only be inconsistent with affording the services a fair income, but also would clearly be disruptive pursuant to Factor D of section 801(b)(1).

a lack of scale (which is another way of indicating that market share is divided among too many competing interactive streaming services). In fact, Mr. Pakman himself recognizes the importance of scale to long-run profitability. Pakman WDT ¶ 26 n.11 (''Scale is a magic word for so many cloud-based companies and services. . . . It may be that Spotify will gain some power over the royalties it pays once it has a critical mass of customers . . . .''). Pakman WDT ¶ 26 n.11 (emphasis added).

Given the paramount importance of scaling to the long-term success of interactive streaming, lowering mechanical royalties in this proceeding—simply to mitigate or prevent shorter-term losses by interactive streaming services—would constitute an unwarranted subsidy to these services at the expense of Copyright Owners.[357]

Also, although the services have indicated their ability to withstand short-term losses as they compete for scale/market share, the record also indicates that there is a limit to such losses—however imprecise and unknown—beyond which services will be unable to attract capital and survive until the long run market dénouement. In this regard, Mr. Joyce noted that, [REDACTED], at some point [REDACTED]. Joyce WDT ¶ 18. As Dr. Leonard testified, ''[REDACTED].'' Leonard AWDT ¶ 101 n.151. This testimony reflects the well-understood principle that ''[t]here is no specific time period . . . that separates the short run from the long run.'' R. Pindyck & D. Rubinfeld, *Microeconomics* at 190 (6th ed. 2005). Thus, although the services appear able to withstand current rates, a rate increase of the magnitude sought by Copyright Owners would run the very real risk of preventing the services from surviving the ''short-run,'' threatening the type of disruption Factor D is intended to prevent.[358]

Moreover, the 44% rate increase adopted by the majority likewise places the services in quite unchartered waters regarding the disruptive impact of that increase. The majority actually recognizes that the increase is so draconian that it cannot be implemented immediately. *See Majority Opinion, supra.* Instead, the majority leaches the increase into the rates year-by-year, as if one can simply assume that the disruptive impact of such a rate increase is ameliorated in this manner. Without a record to consider the impact of that rate increase, the majority may simply be substituting a slow bleed for a fatal blow.[359]

With regard to the Mechanical Floor, I do not find that the continuation of this element of the existing rate structure would be disruptive under the applicable standard. As discussed *supra,* the risks of fractionalized licenses and publisher withdrawals have receded, belying any reasonable assertion that such events are on the ''immediate'' horizon. Further, given that musical works royalties are a fraction of the total royalties paid by interactive streaming services, the triggering of the Mechanical Floor would be unlikely to ''threaten the viability'' of the interactive market.'' Further, because the Mechanical Floor was a bargained-for feature of the benchmark structure on which the Services rely, and because that provision protects the funds available to provide liquidity to songwriters in the form of advances, *removal* of the Mechanical Floor would more likely disrupt ''prevailing industry practices.'' The continuation of the Mechanical Floor avoids that disruption.

With regard to the impact on Copyright Owners, I find that the adoption of a rate structure based on the 2012 benchmark would not be disruptive under the standard quoted above. The record indicates that music publishers have been profitable while this standard has been in effect, and that interactive streaming has contributed to that profitability. Although that profitability is generated by a combination of mechanical and performance royalties paid by interactive streaming services, the fact that those two rights are—without dispute—perfect complements, means that the profitability of Copyright Owners must be viewed economically in the context of royalties realized from both rights (especially given the ''All-In'' aspect of the mechanical royalty).

Indeed, Copyright Owners' principal complaint is that, although their mechanical royalty revenue has increased, it has not increased as fast as the increase in the number of musical works streamed via sound recordings performed on interactive services. However, as noted, *supra,* the record reflects that the increase in streams is itself a function of the price discriminatory rate structure that incentivizes downstream services that can move ''down the demand curve'' and offer streaming services to listeners with a low WTP. 3/13/17 Tr. 701 (Katz). Such a structure will produce an increase in royalties, even as it may produce a lower effective royalty per stream but, as Professor Hubbard explained, that comparison misses the salient economic point. 4/13/17 Tr. 5971–73 (Hubbard).

Further, the current rate structure has allowed for rates to exceed the 10.5% headline rate. For example, [REDACTED]. *Accord,* 3/29/17 Tr. 3637 (Israelite (''I don't even think we thought of them as minima. We thought of them as alternate rates. And we would get the greatest of three different rates.''). In this regard, the existing ''greater of'' structure incorporates the benefits that the Copyright Board of Canada identified (as discussed *supra*) as tilted in favor of rights holders, although the existing structure, established via settlement, ameliorates that impact by providing a ''lesser-of'' approach in the second rate prong.)

In sum, I find no evidentiary basis to support a Factor D adjustment to the rates I have otherwise proposed in this Dissent.

Because I have rejected Copyright Owners' rate proposal, the potential disruptive impact of their proposal is moot, given my decision to consider the ''reasonable'' rate structure and rate issues *before* considering the four itemized factor of section 801(b)(1). However, if I *had incorporated* this disruption consideration within the ''reasonable rate'' analysis, my finding would be the same, *i.e.,* that Copyright Owners' rate proposal would be unreasonable because it would be disruptive under the Factor D standards.

That disruptive effect is captured by the following summary of the rate changes for the several services if Copyright Owners' proposal were to be implemented:

[357] In this regard, Copyright Owners argue that the services could attempt to cut their non-content costs in order to remain sustainable. They suggest that the services emulate Sirius XM, which successfully reduced its non-content costs as a percent of revenue. *See* Rysman WDT ¶ ¶ 98–100. However, as Spotify's CFO, Mr. McCarthy notes, Sirius and XM (the pre-merger predecessors to Sirius XM) ''nearly bankrupted themselves and merged in order to survive.'' McCarthy WRT ¶ 42. Moreover, not only were Sirius XM's content costs lower as a percent of revenue, but also its ''costs declined as a percentage of revenue *as they grew their subscriber base.* . . . . Their costs declined as they achieved scale.'' *Id.* Once again, the necessity of scale remains paramount.

[358] That is, the potentially profitable long-run cost curve, from scaling, may never be attainable if the interactive streaming services remain on perpetual loss-inducing short-run cost curves.

[359] Of course, it is *possible* that the majority may be correct that rolling out this rate increase over five years will ameliorate its disruptive impact. But it is *equally possible* that the rate and structure remain disruptive even when introduced in this extended manner. The salient point, again, is that the fact this rate structure and these rates were adopted post-hearing with the absence of a record to support them makes the analysis too speculative. The parties deserve an opportunity, and are entitled to one under the statute, to challenge the rates and rate structure, whether as inconsistent with Factor D or as inconsistent with any other requisite set forth in section 801(b)(1).

FIGURE 3—IMPACT OF COPYRIGHT OWNERS' PROPOSAL ON SPOTIFY'S ROYALTIES

[In thousands except percentages, 2H2015–1H2016]

[REDACTED]

FIGURE 4—ESTIMATED IMPACT OF THE COPYRIGHT OWNERS' PROPOSAL ON OTHER STREAMING SERVICES, 2015

| Service name | Current | | Copyright Owner's proposal | | Impact of Copyright Owners' proposal | |
|---|---|---|---|---|---|---|
| | Mechanical royalties | Musical works royalties | Mechanical royalties | Musical works royalties | % increase in mechanical royalties | % increase in musical works royalties |
| Google | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Amazon Prime | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| Rhapsody | $7,323,476 | $10,253,216 | $11,230,793 | $14,160,533 | 53% | 38% |
| Apple Music | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] | [REDACTED] |
| TIDAL | $755,522 | $1,754,546 | $1,600,723 | $2,599,747 | 112% | 48% |
| Deezer | $438,412 | $563,412 | $822,541 | $947,540 | 88% | 68% |
| Other | $4,478,824 | $11,255,046 | $16,709,012 | $23,485,234 | 273% | 109% |
| *Average* | *$5,277,869* | *$8,311,074* | *$16,098,189* | *$19,131,394* | *194%* | *109%* |

Marx WRT at 8–9.

These increases are on an order of magnitude that indicates to me that such increase would clearly implicate the applicable disruption standard.

The knock-on effects of this proposal would be disruptive under the applicable standard. Pandora indicates it would have little choice but to eliminate its limited offering Pandora Plus product. *See* Herring WRT ¶ 10. Under Copyright Owners' proposed per user rate, it would pay [REDACTED] the amount it now pays for both mechanical and performance royalties, and royalties would be even higher on the other prong—based on the number of songs played, Herring WRT ¶ 7, even though the overwhelming majority of streams on Pandora Plus are noninteractive and do not implicate the mechanical right. *See* Herring WRT ¶ 16. Mr. Herring further testified that, under Copyright Owners' proposal, [REDACTED]. Consequently, he notes that Pandora would lack any resources to invest in its burgeoning interactive streaming service offerings. Herring WDT ¶ 58.

[REDACTED]. Marx WRT ¶ 16 & Fig. 1.

In similar fashion, Google claims that Copyright Owners' rate proposal would [REDACTED] rates it pays for interactive streaming on its Google Play Music service. More particularly, if Google had paid Copyright Owners' proposed rates from June 2013 to June 2016, [REDACTED], Leonard WRT ¶ 9. On dollar terms, Google estimates that it would have paid $[REDACTED] for musical works rights under Copyright Owners' proposal, compared with [REDACTED] it paid during that period under existing rates. *Id.* ¶ ¶ 8, 9.

Apple also claims that Copyright Owners' proposal would lead to a shutdown of one of its services. Specifically, Apple asserts that it would not continue to offer its purchased content locker service if it were subject to Copyright Owners' per-user proposal and that Apple would never offer a paid content locker again if the Copyright Owners' rates were in place. 3/22/17 Tr. 2526 (Dorn).

Copyright Owners argue that the services could ameliorate any disruptive impact from these rates by estimating the number of plays per user, raising rates and/or limiting functionality (*e.g.,* by capping listening). *See* Rysman WRT ¶ 75. However, there is no sufficient evidence in the record that the services could engage in such modifications and estimations in order to offset the draconian rate increases that would result from Copyright Owners' proposal.

Copyright Owners argue that the current status of the interactive streaming market indicates that neither their proposed rate structure nor their proposed higher rates would be disruptive pursuant to Factor D or the Judges' application of that factor. In that regard, Copyright Owners make three points with regard to ongoing market developments:

1. Ongoing entry of new interactive streaming services indicates that the market is healthy and expanding;

2. The entry in particular of large entities with comprehensive product ''ecosysems'' (*i.e.,* Amazon, Apple and Google) specifically demonstrates the opportunity for profitable interactive streaming; and

3. [REDACTED].

4/4/17 Tr. 4647–49 (Eisenach).

I find these three points inapposite with regard to the issue of whether Copyright Owners' proposed rate structure and rate increase would minimize disruption. Simply put, Copyright Owners' proposed changes are not yet in existence, so any evidence of changes that have occurred *previously* cannot reflect the potential impact of Copyright Owners' proposals. Of particular note, Copyright Owners' proposal would eliminate the ''All-In'' feature of the mechanical rate, resulting in the disruption from ''double-counting'' the value of perfect complements that the ''All-In'' feature is designed to avoid.

And again, I return to Copyright Owners' endorsement of the bargaining room theory and their concomitant acknowledgement that they might well engage in bargaining, by which they would agree to lower rates to accommodate different services catering to differing listener segments. That argument at least implicitly acknowledges that Copyright Owners' ''one-size-fits-all'' rate is a misnomer, and that their proposal is designed to handle potential disruptive impacts through negotiation that were not subject to an application of any of the section 801(b)(1) factors.

In sum, even if I had integrated my disruption analysis into my reasonable rate analysis (as opposed to treating it separately), I would have rejected Copyright Owners' rate structure and rate proposal as inconsistent with Factor D.

I also find that Apple's per play rate structure would be disruptive, essentially for the same reason that Copyright Owners' proposed structure would be disruptive. For example, Apple's proposed per-play rate would increase Spotify's royalty payments on its ad-supported service to [REDACTED]% of revenue, threatening the continuation of that service—the only one to provide a monetarily free service. *See Written Rebuttal Testimony of Paul Vogel (on behalf of Spotify USA Inc.)* ¶ 48. In this regard, the senior director of Apple Music, David Dorn, indicated in colloquy with the Judges, that [REDACTED]. *See* 3/22/17 Tr. 2538 (Dorn) ([REDACTED]). Of course, the ad-supported Spotify service, and the [REDACTED], for example, are designed to [REDACTED], so Apple's proposed rate structure and rates would disincentivize such distribution channels, impeding the ''future'' listener conversion Mr. Dorn anticipates. Moreover, such low WTP listeners on an ad-supported or other free-to-the-listener service generate royalties that would otherwise not be paid. *See Written Rebuttal Testimony of Will Page (On behalf of Spotify USA Inc.)* ¶ 48 ([REDACTED]); *see also* 4/7/17 Tr. 5503 (Marx) ([REDACTED]).

**4. Conclusion**

For the foregoing reasons, I respectfully dissent.

Issue Date: November 5, 2018.

David R. Strickler,

Copyright Royalty Judge.

**List of Subjects in 37 CFR Part 385**

Copyright, Phonorecords, Recordings.

**Final Regulations**

■ For the reasons set forth in the preamble, the Copyright Royalty Judges revise 37 CFR part 385 to read as follows.

## PART 385—RATES AND TERMS FOR USE OF NONDRAMATIC MUSICAL WORKS IN THE MAKING AND DISTRIBUTING OF PHYSICAL AND DIGITAL PHONORECORDS



**Authority:** 17 U.S.C. 115, 801(b)(1), 804(b)(4).

## PART 385—RATES AND TERMS FOR USE OF NONDRAMATIC MUSICAL WORKS IN THE MAKING AND DISTRIBUTING OF PHYSICAL AND DIGITAL PHONORECORDS

### Subpart A—Regulations of General Application

#### § 385.1 General.

(a) *Scope.* This part establishes rates and terms of royalty payments for the use of nondramatic musical works in making and distributing of physical and digital phonorecords in accordance with the provisions of 17 U.S.C. 115. This subpart contains regulations of general application to the making and distributing of phonorecords subject to the section 115 license.

(b) *Legal compliance.* Licensees relying on the compulsory license detailed in 17 U.S.C. 115 shall comply with the requirements of that section, the rates and terms of this part, and any other applicable regulations. This part describes rates and terms for the compulsory license only.

(c) *Interpretation.* This part is intended only to set rates and terms for situations in which the exclusive rights of a Copyright Owner are implicated and a compulsory license pursuant to 17 U.S.C. 115 is obtained. Neither the part nor the act of obtaining a license under 17 U.S.C. 115 is intended to express or imply any conclusion as to the circumstances in which a user must obtain a compulsory license pursuant to 17 U.S.C. 115.

(d) *Relationship to voluntary agreements.* The rates and terms of any license agreements entered into by Copyright Owners and Licensees relating to use of musical works within the scope of those license agreements shall apply *in lieu* of the rates and terms of this part.

#### § 385.2 Definitions.

*Accounting Period* means the monthly period specified in 17 U.S.C. 115(c)(5) and any related regulations.

*Affiliate* means an entity controlling, controlled by, or under common control with another entity, except that an affiliate of a record company shall not include a Copyright Owner to the extent it is engaging in business as to musical works.

*Bundled Subscription Offering* means a Subscription Offering providing Licensed Activity consisting of Streams or Limited Downloads that is made available to End Users with one or more other products or services (including products or services subject to other subparts) as part of a single transaction without pricing for the subscription service providing Licensed Activity separate from the product(s) or service(s) with which it is made available (*e.g.,* a case in which a user can buy a portable device and one-year access to a subscription service providing Licensed Activity for a single price),

*Copyright Owner(s)* are nondramatic musical works copyright owners who are entitled to royalty payments made under this part pursuant to the compulsory license under 17 U.S.C. 115.

*Digital Phonorecord Delivery* or *DPD* has the same meaning as in 17 U.S.C. 115(d).

*End User* means each unique person that:

(1) Pays a subscription fee for an Offering during the relevant Accounting Period; or

(2) Makes at least one Play during the relevant Accounting Period.

*Family Plan* means a discounted subscription to be shared by two or more family members for a single subscription price.

*Free Trial Offering* means a subscription to a Service's transmissions of sound recordings embodying musical works when:

(1) Neither the Service, the Record Company, the Copyright Owner, nor any person or entity acting on behalf of or *in lieu* of any of them receives any monetary consideration for the Offering;

(2) The free usage does not exceed 30 consecutive days per subscriber per two-year period;

(3) In connection with the Offering, the Service is operating with appropriate musical license authority and complies with the recordkeeping requirements in § 385.4;

(4) Upon receipt by the Service of written notice from the Copyright Owner or its agent stating in good faith that the Service is in a material manner operating without appropriate license authority from the Copyright Owner under 17 U.S.C. 115, the Service shall within 5 business days cease

transmission of the sound recording embodying that musical work and withdraw it from the repertoire available as part of a Free Trial Offering;

(5) The Free Trial Offering is made available to the End User free of any charge; and

(6) The Service offers the End User periodically during the free usage an opportunity to subscribe to a non-free Offering of the Service.

*GAAP* means U.S. Generally Accepted Accounting Principles in effect at the relevant time, except that if the U.S. Securities and Exchange Commission permits or requires entities with securities that are publicly traded in the U.S. to employ International Financial Reporting Standards in lieu of Generally Accepted Accounting Principles, then that entity may employ International Financial Reporting Standards as ''GAAP'' for purposes of this subpart.

*Interactive Stream* means a Stream, where the performance of the sound recording by means of the Stream is not exempt from the sound recording performance royalty under 17 U.S.C. 114(d)(1) and does not in itself, or as a result of a program in which it is included, qualify for statutory licensing under 17 U.S.C. 114(d)(2).

*Licensee* means any entity availing itself of the compulsory license under 17 U.S.C. 115 to use copyrighted musical works in the making or distributing of physical or digital phonorecords.

*Licensed Activity,* as the term is used in subpart B of this part, means delivery of musical works, under voluntary or statutory license, *via* physical phonorecords and Digital Phonorecord Deliveries in connection with Permanent Digital Downloads, Ringtones, and Music Bundles; and, as the term is used in subparts C and D of this part, means delivery of musical works, under voluntary or statutory license, *via* Digital Phonorecord Deliveries in connection with Interactive Streams, Limited Downloads, Limited Offerings, mixed Bundles, and Locker Services.

*Limited Download* means a transmission of a sound recording embodying a musical work to an End User of a digital phonorecord under 17 U.S.C. 115(c)(3)(C) and (D) that results in a Digital Phonorecord Delivery of that sound recording that is only accessible for listening for—

(1) An amount of time not to exceed one month from the time of the transmission (unless the Licensee, *in lieu* of retransmitting the same sound recording as another limited download, separately and upon specific request of the End User made through a live network connection, reauthorizes use for another time period not to exceed one month), or in the case of a subscription plan, a period of time following the end of the applicable subscription no longer than a subscription renewal period or three months, whichever is shorter; or

(2) A number of times not to exceed 12 (unless the Licensee, *in lieu* of retransmitting the same sound recording as another Limited Download, separately and upon specific request of the End User made through a live network connection, reauthorizes use of another series of 12 or fewer plays), or in the case of a subscription transmission, 12 times after the end of the applicable subscription.

*Limited Offering* means a subscription plan providing Interactive Streams or Limited Downloads for which—

(1) An End User cannot choose to listen to a particular sound recording (*i.e.,* the Service does not provide Interactive Streams of individual recordings that are on-demand, and Limited Downloads are rendered only as part of programs rather than as individual recordings that are on-demand); or

(2) The particular sound recordings available to the End User over a period of time are substantially limited relative to Services in the marketplace providing access to a comprehensive catalog of recordings (*e.g.,* a product limited to a particular genre or permitting Interactive Streaming only from a monthly playlist consisting of a limited set of recordings).

*Locker Service* means an Offering providing digital access to sound recordings of musical works in the form of Interactive Streams, Permanent Digital Downloads, Restricted Downloads or Ringtones where the Service has reasonably determined that the End User has purchased or is otherwise in possession of the subject phonorecords of the applicable sound recording prior to the End User's first request to use the sound recording via the Locker Service. The term Locker Service does not mean any part of a Service's products otherwise meeting this definition, but as to which the Service has not obtained a section 115 license.

*Mixed Service Bundle* means one or more of Permanent Digital Downloads, Ringtones, Locker Services, or Limited Offerings a Service delivers to End Users together with one or more non-music services (*e.g.,* internet access service, mobile phone service) or non-music products (*e.g.,* a telephone device) of more than token value and provided to users as part of one transaction without pricing for the music services or music products separate from the whole Offering.

*Music Bundle* means two or more of physical phonorecords, Permanent Digital Downloads or Ringtones delivered as part of one transaction (*e.g.,* download plus ringtone, CD plus downloads). In the case of Music Bundles containing one or more physical phonorecords, the Service must sell the physical phonorecord component of the Music Bundle under a single catalog number, and the musical works embodied in the Digital Phonorecord Delivery configurations in the Music Bundle must be the same as, or a subset of, the musical works embodied in the physical phonorecords; provided that when the Music Bundle contains a set of Digital Phonorecord Deliveries sold by the same Record Company under substantially the same title as the physical phonorecord (*e.g.,* a corresponding digital album), the Service may include in the same bundle up to 5 sound recordings of musical works that are included in the stand-alone version of the set of digital phonorecord deliveries but not included on the physical phonorecord. In addition, the Service must permanently part with possession of the physical phonorecord or phonorecords it sells as part of the Music Bundle. In the case of Music Bundles composed solely of digital phonorecord deliveries, the number of digital phonorecord deliveries in either configuration cannot exceed 20, and the musical works embodied in each configuration in the Music Bundle must be the same as, or a subset of, the musical works embodied in the configuration containing the most musical works.

*Offering* means a Service's engagement in Licensed Activity covered by subparts C and D of this part.

*Paid Locker Service* means a Locker Service for which the End User pays a fee to the Service.

*Performance Royalty* means the license fee payable for the right to perform publicly musical works in any of the forms covered by subparts C and D this part.

*Permanent Digital Download* or *PDD* means a Digital Phonorecord Delivery in a form that the End User may retain on a permanent basis and replay at any time.

*Play* means an Interactive Stream, or play of a Limited Download, lasting 30 seconds or more and, if a track lasts in its entirety under 30 seconds, an Interactive Stream or play of a Limited Download of the entire duration of the track. A Play excludes an Interactive Stream or play of a Limited Download that has not been initiated or requested by a human user. If a single End User plays the same track more than 50 straight times, all plays after play 50 shall be deemed not to have been initiated or requested by a human user.

*Promotional Offering* means a digital transmission of a sound recording, in the form of an Interactive Stream or Limited Download, embodying a musical work, the primary purpose of which is to promote the sale or other paid use of that sound recording or to promote the artist performing on that sound recording and not to promote or suggest promotion or endorsement of any other good or service and:

(1) A Record Company is lawfully distributing the sound recording through established retail channels or, if the sound recording is not yet released, the Record Company has a good faith intention to lawfully distribute the sound recording or a different version of the sound recording embodying the same musical work;

(2) For Interactive Streaming or Limited Downloads, the Record Company requires a writing signed by an authorized representative of the Service representing that the Service is operating with appropriate musical works license authority and that the Service is in compliance with the recordkeeping requirements of § 385.4;

(3) For Interactive Streaming of segments of sound recordings not exceeding 90 seconds, the Record Company delivers or authorizes delivery of the segments for promotional purposes and neither the Service nor the Record Company creates or uses a segment of a sound recording in violation of 17 U.S.C. 106(2) or 115(a)(2);

(4) The Promotional Offering is made available to an End User free of any charge; and

(5) The Service provides to the End User at the same time as the Promotional Offering stream an opportunity to purchase the sound recording or the Service periodically offers End Users the opportunity to subscribe to a paid Offering of the Service.

*Purchased Content Locker Service* means a Locker Service made available to End User purchasers of Permanent Digital Downloads, Ringtones, or physical phonorecords at no incremental charge above the otherwise applicable purchase price of the PDDs, Ringtones, or physical phonorecords acquired from a qualifying seller. With a Purchased Content Locker Service, an End User may receive one or more additional phonorecords of the purchased sound recordings of musical works in the form of Permanent Digital Downloads or Ringtones at the time of purchase, or subsequently have digital access to the purchased sound recordings of musical works in the form of Interactive Streams, additional Permanent Digital Downloads, Restricted Downloads, or Ringtones.

(1) A *qualifying seller* for purposes of this definition is the entity operating the Service, including affiliates, predecessors, or successors in interest, or—

(i) In the case of Permanent Digital Downloads or Ringtones, a seller having a legitimate connection to the locker service provider pursuant to one or more written agreements (including that the Purchased Content Locker Service and Permanent Digital Downloads or Ringtones are offered through the same third party); or

(ii) In the case of physical phonorecords:

(A) The seller of the physical phonorecord has an agreement with the Purchased Content Locker Service provider establishing an integrated offer that creates a consumer experience commensurate with having the same Service both sell the physical phonorecord and offer the integrated locker service; or

(B) The Service has an agreement with the entity offering the Purchased Content Locker Service establishing an integrated offer that creates a consumer experience commensurate with having the same Service both sell the physical phonorecord and offer the integrated locker service.

(2) [Reserved]

*Record Company* means a person or entity that:

(1) Is a copyright owner of a sound recording embodying a musical work;

(2) In the case of a sound recording of a musical work fixed before February 15, 1972, has rights to the sound recording, under the common law or statutes of any State, that are equivalent to the rights of a copyright owner of a sound recording of a musical work under title 17, United States Code;

(3) Is an exclusive Licensee of the rights to reproduce and distribute a sound recording of a musical work; or

(4) Performs the functions of marketing and authorizing the distribution of a sound recording of a musical work under its own label, under the authority of the Copyright Owner of the sound recording.

*Relevant Page* means an electronic display (for example, a web page or screen) from which a Service's Offering consisting of Streams or Limited Downloads is directly available to End Users, but only when the Offering and content directly relating to the Offering (*e.g.,* an image of the artist, information about the artist or album, reviews, credits, and music player controls) comprises 75% or more of the space on that display, excluding any space occupied by advertising. An Offering is directly available to End Users from a page if End Users can receive sound recordings of musical works (in most cases this will be the page on which the Limited Download or Interactive Stream takes place).

*Restricted Download* means a Digital Phonorecord Delivery in a form that cannot be retained and replayed on a permanent basis. The term Restricted Download includes a Limited Download.

*Ringtone* means a phonorecord of a part of a musical work distributed as a Digital Phonorecord Delivery in a format to be made resident on a telecommunications device for use to announce the reception of an incoming telephone call or other communication or message or to alert the receiver to the fact that there is a communication or message.

*Service* means that entity governed by subparts C and D of this part, which might or might not be the Licensee, that with respect to the section 115 license:

(1) Contracts with or has a direct relationship with End Users or otherwise controls the content made available to End Users;

(2) Is able to report fully on Service Revenue from the provision of musical works embodied in phonorecords to the public, and to the extent applicable, verify Service Revenue through an audit; and

(3) Is able to report fully on its usage of musical works, or procure such reporting and, to the extent applicable, verify usage through an audit.

*Service Revenue.* (1) Subject to paragraphs (2) through (5) of this definition and subject to GAAP, *Service Revenue* shall mean:

(i) All revenue from End Users recognized by a Service for the provision of any Offering;

(ii) All revenue recognized by a Service by way of sponsorship and commissions as a result of the inclusion of third-party ''in-stream'' or ''in-download'' advertising as part of any Offering, *i.e.,* advertising placed immediately at the start or end of, or during the actual delivery of, a musical work, by way of Interactive Streaming or Limited Downloads; and

(iii) All revenue recognized by the Service, including by way of sponsorship and commissions, as a result of the placement of third-party advertising on a Relevant Page of the

Service or on any page that directly follows a Relevant Page leading up to and including the Limited Download or Interactive Stream of a musical work; provided that, in case more than one Offering is available to End Users from a Relevant Page, any advertising revenue shall be allocated between or among the Services on the basis of the relative amounts of the page they occupy.

(2) Service Revenue shall:

(i) Include revenue recognized by the Service, or by any associate, affiliate, agent, or representative of the Service in lieu of its being recognized by the Service; and

(ii) Include the value of any barter or other nonmonetary consideration; and

(iii) Except as expressly detailed in this part, not be subject to any other deduction or set-off other than refunds to End Users for Offerings that the End Users were unable to use because of technical faults in the Offering or other bona fide refunds or credits issued to End Users in the ordinary course of business.

(3) Service Revenue shall exclude revenue derived by the Service solely in connection with activities other than Offering(s), whereas advertising or sponsorship revenue derived in connection with any Offering(s) shall be treated as provided in paragraphs (2) and (4) of this definition.

(4) For purposes of paragraph (1) of this definition, advertising or sponsorship revenue shall be reduced by the actual cost of obtaining that revenue, not to exceed 15%.

(5) In instances in which a Service provides an Offering to End Users as part of the same transaction with one or more other products or services that are not Licensed Activities, then the revenue from End Users deemed to be recognized by the Service for the Offering for the purpose of paragraph (1) of this definition shall be the lesser of the revenue recognized from End Users for the bundle and the aggregate standalone published prices for End Users for each of the component(s) of the bundle that are Licensed Activities; provided that, 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 standalone prices for comparables.

*Stream* means the digital transmission of a sound recording of a musical work to an End User—

(1) To allow the End User to listen to the sound recording, while maintaining a live network connection to the transmitting service, substantially at the time of transmission, except to the extent that the sound recording remains accessible for future listening from a Streaming Cache Reproduction;

(2) Using technology that is designed such that the sound recording does not remain accessible for future listening, except to the extent that the sound recording remains accessible for future listening from a Streaming Cache Reproduction; and

(3) That is subject to licensing as a public performance of the musical work.

*Streaming Cache Reproduction* means a reproduction of a sound recording embodying a musical work made on a computer or other receiving device by a Service solely for the purpose of permitting an End User who has previously received a Stream of that sound recording to play the sound recording again from local storage on the computer or other device rather than by means of a transmission; provided that the End User is only able to do so while maintaining a live network connection to the Service, and the reproduction is encrypted or otherwise protected consistent with prevailing industry standards to prevent it from being played in any other manner or on any device other than the computer or other device on which it was originally made.

*Student Plan* means a discounted Subscription to an Offering available on a limited basis to students.

*Subscription* means an Offering for which End Users are required to pay a fee to have access to the Offering for defined subscription periods of 3 years or less (in contrast to, for example, a service where the basic charge to users is a payment per download or per play), whether the End User makes payment for access to the Offering on a standalone basis or as part of a Bundle with one or more other products or services.

*Total Cost of Content* or *TCC* means the total amount expensed by a Service or any of its affiliates in accordance with GAAP for rights to make interactive streams or limited downloads of a musical work embodied in a sound recording through the Service for the accounting period, which amount shall equal the applicable consideration for those rights at the time the applicable consideration is properly recognized as an expense under GAAP. As used in this definition, ''applicable consideration'' means anything of value given for the identified rights to undertake the Licensed Activity, including, without limitation, ownership equity, monetary advances, barter or any other monetary and/or nonmonetary consideration, whether that consideration is conveyed via a single agreement, multiple agreements and/or agreements that do not themselves authorize the Licensed Activity but nevertheless provide consideration for the identified rights to undertake the Licensed Activity, and including any value given to an affiliate of a record company for the rights to undertake the Licensed Activity. Value given to a Copyright Owner of musical works that is controlling, controlled by, or under common control with a Record Company for rights to undertake the Licensed Activity shall not be considered value given to the Record Company. Notwithstanding the foregoing, applicable consideration shall not include in-kind promotional consideration given to a Record Company (or affiliate thereof) that is used to promote the sale or paid use of sound recordings embodying musical works or the paid use of music services through which sound recordings embodying musical works are available where the in-kind promotional consideration is given in connection with a use that qualifies for licensing under 17 U.S.C. 115.

**§ 385.3 Late payments.**

A Licensee shall pay a late fee of 1.5% per month, or the highest lawful rate, whichever is lower, for any payment owed to a Copyright Owner and remaining unpaid after the due date established in 17 U.S.C. 115(c)(5) and detailed in part 210 of this title. Late fees shall accrue from the due date until the Copyright Owner receives payment.

**§ 385.4 Recordkeeping for promotional or free trial non-royalty-bearing uses.**

(a) *General.* A Licensee transmitting a sound recording embodying a musical work subject to section 115 and subparts C and D of this part and claiming a Promotional or Free Trial zero royalty rate shall keep complete and accurate contemporaneous written records of making or authorizing Interactive Streams or Limited Downloads, including the sound recordings and musical works involved, the artists, the release dates of the sound recordings, a brief statement of the promotional activities authorized, the identity of the Offering or Offerings for which the zero-rate is authorized (including the internet address if applicable), and the beginning and end date of each zero rate Offering.

(b) *Retention of records.* A Service claiming zero rates shall maintain the records required by this section for no less time than the Service maintains records of royalty-bearing uses involving the same types of Offerings in the ordinary course of business, but in no event for fewer than five years from the conclusion of the zero rate Offerings to which they pertain.

(c) *Availability of records.* If a Copyright Owner or agent requests information concerning zero rate Offerings, the Licensee shall respond to the request within an agreed, reasonable time.

## Subpart B—Physical Phonorecord Deliveries, Permanent Digital Downloads, Ringtones, and Music Bundles

### § 385.10 Scope.

This subpart establishes rates and terms of royalty payments for making and distributing phonorecords, including by means of Digital Phonorecord Deliveries, in accordance with the provisions of 17 U.S.C. 115.

### § 385.11 Royalty rates.

(a) *Physical phonorecord deliveries and Permanent Digital Downloads.* For every physical phonorecord and Permanent Digital Download the Licensee makes and distributes or authorizes to be made and distributed, the royalty rate payable for each work embodied in the phonorecord or PDD shall be either 9.1 cents or 1.75 cents per minute of playing time or fraction thereof, whichever amount is larger.

(b) *Ringtones.* For every Ringtone the Licensee makes and distributes or authorizes to be made and distributed, the royalty rate payable for each work embodied therein shall be 24 cents.

(c) *Music Bundles.* For a Music Bundle, the royalty rate for each element of the Music Bundle shall be the rate required under paragraph (a) or (b) of this section, as appropriate.

## Subpart C—Interactive Streaming, Limited Downloads, Limited Offerings, Mixed Service Bundles, Bundled Subscription Offerings, Locker Services, and Other Delivery Configurations

### § 385.20 Scope.

This subpart establishes rates and terms of royalty payments for Interactive Streams and Limited Downloads of musical works, and other reproductions or distributions of musical works through Limited Offerings, Mixed Service Bundles, Bundled Subscription Offerings, Paid Locker Services, and Purchased Content Locker Services provided through subscription and nonsubscription digital music Services in accordance with the provisions of 17 U.S.C. 115, exclusive of Offerings subject to subpart D of this part.

### § 385.21 Royalty rates and calculations.

(a) *Applicable royalty.* Licensees that engage in Licensed Activity covered by this subpart pursuant to 17 U.S.C. 115 shall pay royalties therefor that are calculated as provided in this section, subject to the royalty floors for specific types of services described in § 385.22.

(b) *Rate calculation.* Royalty payments for Licensed Activity in this subpart shall be calculated as provided in paragraph (b) of this section. If a Service includes different Offerings, royalties must be calculated separately with respect to each Offering taking into consideration Service Revenue and expenses associated with each Offering.

(1) *Step 1: Calculate the all-In royalty for the Offering.* For each Accounting Period, the all-in royalty shall be the greater of the applicable percent of Service Revenue and the applicable percent of TCC set forth in the following table.

TABLE 1 TO PARAGRAPH (b)(1)—2018–2022 ALL-IN ROYALTY RATES

| Royalty year | 2018 (%) | 2019 (%) | 2020 (%) | 2021 (%) | 2022 (%) |
|---|---|---|---|---|---|
| Percent of Revenue | 11.4 | 12.3 | 13.3 | 14.2 | 15.1 |
| Percent of TCC | 22.0 | 23.1 | 24.1 | 25.2 | 26.2 |

(2) *Step 2: Subtract applicable Performance Royalties.* From the amount determined in step 1 in paragraph (b)(1) of this section, for each Offering of the Service, subtract the total amount of Performance Royalty that the Service has expensed or will expense pursuant to public performance licenses in connection with uses of musical works through that Offering during the Accounting Period that constitute Licensed Activity. Although this amount may be the total of the Service's payments for that Offering for the Accounting Period, it will be less than the total of the Performance Royalties if the Service is also engaging in public performance of musical works that does not constitute Licensed Activity. In the case in which the Service is also engaging in the public performance of musical works that does not constitute Licensed Activity, the amount to be subtracted for Performance Royalties shall be the amount allocable to Licensed Activity uses through the relevant Offering as determined in relation to all uses of musical works for which the Service pays Performance Royalties for the Accounting Period. The Service shall make this allocation on the basis of Plays of musical works or, where per-play information is unavailable because of *bona fide* technical limitations as described in step 3 in paragraph (b)(3) of this section, using the same alternative methodology as provided in step 4 in paragraph (b)(4) of this section.

(3) *Step 3: Determine the payable royalty pool.* The payable royalty pool is the amount payable for the reproduction and distribution of all musical works used by the Service by virtue of its Licensed Activity for a particular Offering during the Accounting Period. This amount is the greater of:

(i) The result determined in step 2 in paragraph (b)(2) of this section; and

(ii) The royalty floor (if any) resulting from the calculations described in § 385.22.

(4) *Step 4: Calculate the per-work royalty allocation.* This is the amount payable for the reproduction and distribution of each musical work used by the Service by virtue of its Licensed Activity through a particular Offering during the Accounting Period. To determine this amount, the Service must allocate the result determined in step 3 in paragraph (b)(3) of this section to each musical work used through the Offering. The allocation shall be accomplished by dividing the payable royalty pool determined in step 3 for the Offering by the total number of Plays of all musical works through the Offering during the Accounting Period (other than Plays subject to subpart D of this part) to yield a per-Play allocation, and multiplying that result by the number of Plays of each musical work (other than Plays subject to subpart D of this part)) through the Offering during the Accounting Period. For purposes of determining the per-work royalty allocation in all calculations under step 4 in this paragraph (b)(4) only (*i.e.,* after the payable royalty pool has been determined), for sound recordings of musical works with a playing time of

over 5 minutes, each Play shall be counted as provided in paragraph (c) of this section. Notwithstanding the foregoing, if the Service is not capable of tracking Play information because of *bona fide* limitations of the available technology for Offerings of that nature or of devices useable with the Offering, the per-work royalty allocation may instead be accomplished in a manner consistent with the methodology used by the Service for making royalty payment allocations for the use of individual sound recordings.

(c) *Overtime adjustment.* For purposes of the calculations in step 4 in paragraph (b)(4) of this section only, for sound recordings of musical works with a playing time of over 5 minutes, adjust the number of Plays as follows.

(1) 5:01 to 6:00 minutes—Each play = 1.2 plays.

(2) 6:01 to 7:00 minutes—Each play = 1.4 plays.

(3) 7:01 to 8:00 minutes—Each play = 1.6 plays.

(4) 8:01 to 9:00 minutes—Each play = 1.8 plays.

(5) 9:01 to 10:00 minutes—Each play = 2.0 plays.

(6) For playing times of greater than 10 minutes, continue to add 0.2 plays for each additional minute or fraction thereof.

(d) *Accounting.* The calculations required by paragraph (b) of this section shall be made in good faith and on the basis of the best knowledge, information, and belief of the Licensee at the time payment is due, and subject to the additional accounting and certification requirements of 17 U.S.C. 115(c)(5) and part 210 of this title. Without limitation, a Licensee's statements of account shall set forth each step of its calculations with sufficient information to allow the Copyright Owner to assess the accuracy and manner in which the Licensee determined the payable royalty pool and per-play allocations (including information sufficient to demonstrate whether and how a royalty floor pursuant to § 385.22 does or does not apply) and, for each Offering the Licensee reports, also indicate the type of Licensed Activity involved and the number of Plays of each musical work (including an indication of any overtime adjustment applied) that is the basis of the per-work royalty allocation being paid.

### § 385.22 Royalty floors for specific types of offerings.

(a) *In general.* The following royalty floors for use in step 3 of § 385.21(b)(3)(ii) shall apply to the respective types of Offerings.

(1) *Standalone non-portable Subscription—streaming only.* Except as provided in paragraph (a)(4) of this section, in the case of a Subscription Offering through which an End User can listen to sound recordings only in the form of Interactive Streams and only from a non-portable device to which those Streams are originally transmitted while the device has a live network connection, the royalty floor is the aggregate amount of 15 cents per subscriber per month.

(2) *Standalone non-portable Subscription—mixed.* Except as provided in paragraph (a)(4) of this section, in the case of a Subscription Offering through which an End User can listen to sound recordings either in the form of Interactive Streams or Limited Downloads but only from a non-portable device to which those Streams or Limited Downloads are originally transmitted, the royalty floor for use in step 3 of § 385.21(b)(3)(ii) is the aggregate amount of 30 cents per subscriber per month.

(3) *Standalone portable Subscription Offering.* Except as provided in paragraph (a)(4) of this section, in the case of a Subscription Offering through which an End User can listen to sound recordings in the form of Interactive Streams or Limited Downloads from a portable device, the royalty floor for use in step 3 of § 385.21(b)(3)(ii) is the aggregate amount of 50 cents per subscriber per month.

(4) *Bundled Subscription Offerings.* In the case of a Bundled Subscription Offering, the royalty floor for use in step 3 of § 385.21(b)(3)(ii) is the royalty floor that would apply to the music component of the bundle if it were offered on a standalone basis for each End User who has made at least one Play of a licensed work during that month (each such End User to be considered an ''active subscriber'').

(b) *Computation of royalty rates.* For purposes of paragraph (a) of this section, to determine the royalty floor, as applicable to any particular Offering, the total number of subscriber-months for the Accounting Period, shall be calculated by taking all End Users who were subscribers for complete calendar months, prorating in the case of End Users who were subscribers for only part of a calendar month, and deducting on a prorated basis for End Users covered by an Offering subject to subpart D of this part, except in the case of a Bundled Subscription Offering, subscriber-months shall be determined with respect to active subscribers as defined in paragraph (a)(4) of this section. The product of the total number of subscriber-months for the Accounting Period and the specified number of cents per subscriber (or active subscriber, as the case may be) shall be used as the subscriber-based component of the royalty floor for the Accounting Period. A Family Plan shall be treated as 1.5 subscribers per month, prorated in the case of a Family Plan Subscription in effect for only part of a calendar month. A Student Plan shall be treated as 0.50 subscribers per month, prorated in the case of a Student Plan End User who subscribed for only part of a calendar month.

## Subpart D—Promotional and Free-to-the-User Offerings

### § 385.30 Scope.

This subpart establishes rates and terms of royalty payments for Promotional Offerings, Free Trial Offerings, and Certain Purchased Content Locker Services provided by subscription and nonsubscription digital music Services in accordance with the provisions of 17 U.S.C. 115.

### § 385.31 Royalty rates.

(a) *Promotional Offerings.* For Promotional Offerings of audio-only Interactive Streaming and Limited Downloads of sound recordings embodying musical works that the Record Company authorizes royalty-free to the Service, the royalty rate is zero.

(b) *Free Trial Offerings.* For Free Trial Offerings for which the Service receives no monetary consideration, the royalty rate is zero.

(c) *Certain Purchased Content Locker Services.* For every Purchased Content Locker Service for which the Service receives no monetary consideration, the royalty rate is zero.

(d) *Unauthorized use.* If a Copyright Owner or agent of the Copyright Owner sends written notice to a Licensee stating in good faith that a particular Offering subject to this subpart differs in a material manner from the terms governing that Offering, the Licensee must within 5 business days cease Streaming or otherwise making available that Copyright Owner's musical works and shall withdraw from the identified Offering any End User's access to the subject musical work.

Dated: December 18, 2018.

**Suzanne M. Barnett,**

*Chief Copyright Royalty Judge.*

Approved by:

**Carla D. Hayden,**

*Librarian of Congress.*

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