

**Exhibit 85 Reply Class Certification
Expert Report of Steven Schwartz, Ph.D.**

(Dkt. No. 316-1)

REDACTED



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UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WASHINGTON
AT SEATTLE

**IN RE: VALVE ANTITRUST
LITIGATION**

Case No. 2:21-cv-00563-JCC

**REPLY CLASS CERTIFICATION
EXPERT REPORT OF**
Steven Schwartz, Ph.D.

A handwritten signature in black ink, reading "Steven Schwartz", is written over a horizontal line. The signature is fluid and cursive.

Steven Schwartz, Ph.D.

July 12, 2024

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1. Introduction

1.1. Assignment

- (1) Intensity, a Secretariat company / Secretariat Advisors, LLC (“Intensity/Secretariat”),¹ has been retained by Plaintiffs’ Counsel on behalf of Wolfire Games, LLC (“Wolfire”), Dark Catt Studios Holdings, Inc. (“DCS Holdings”), Dark Catt Studios Interactive LLC (“DCS Interactive”) (together with DCS Holdings, “Dark Catt”), and a putative class of Plaintiffs (together, “Plaintiffs”) in the above-captioned litigation against Valve Corporation (“Valve”).²
- (2) On February 8, 2024, I submitted an expert report (hereinafter referred to as my “Opening Report” or the “Schwartz Opening Report”) in which I answered the following questions:³
- Are economic methodologies available to define an appropriate relevant market and assess Valve’s market power in that relevant market?
 - Are there economic methodologies that can be used to demonstrate the class-wide impact of Valve’s conduct on putative class members?
 - Are economic methodologies available to calculate class-wide damages?
- (3) The answer to all three questions is yes, for the reasons set forth in my Opening Report. I incorporate my Opening Report, including all attachments and backup materials, herein by reference.

¹ On February 1, 2023, Intensity, LLC was acquired by Secretariat International and began operating as Intensity, a Secretariat Company. On January 1, 2024, my employment was transferred to Secretariat Advisors. Intensity operated as Intensity, a Secretariat Company at the time of my Opening Report and deposition. As of July 1, 2024, Intensity operates as Secretariat Advisors.

Intensity/Secretariat is currently being compensated at a rate of \$1,100 per hour for my work in this matter. Prior to January 2024, Intensity/Secretariat was compensated at an hourly rate of \$1,050. Intensity/Secretariat is being compensated for time spent by others on my team at rates that are lower than my hourly rate. Intensity/Secretariat’s compensation is not dependent on either my conclusions, the substance of my testimony, or the outcome of this matter.

² As discussed in my Opening Report, the game “developer” and game “publisher” serve different functions, whether those functions are accomplished by a single entity or multiple ones, that is sometimes a single company undertakes both functions. In this report, the terms are used interchangeably (unless otherwise noted) to describe the entity that is actually paying the Steam commissions to Valve and are part of the putative class. See:

Class Certification Expert Report of Steven Schwartz, Ph.D. (“Schwartz Opening Report”), 2/8/2024, fn. 42.

³ Schwartz Opening Report, 2/8/2024.

I note that on March 21, 2024 I submitted a corrected version of my Opening Report along with errata. For purposes of my Reply Report, I incorporate those edits into my originally submitted report and reference my February 8, 2024 submission throughout. See:

Corrected Class Certification Expert Report of Steven Schwartz, Ph.D., 3/21/2024.

Schwartz Class Certification Report Errata, 3/21/2024.

- (4) I have since been asked to evaluate and respond to the respective expert reports of Lesley Chiou, Ph.D. (“Chiou Report”), and Ashley Langer, Ph.D. (“Langer Report”), which were submitted on May 17, 2024 on behalf of Valve (collectively, the “Defendant’s Expert Reports”), in response to my Opening Report.⁴
- (5) This reply report sets forth my analysis of and conclusions about the opinions set forth in the Defendant’s Expert Reports, based on my analysis to date. Specifically, this report sets forth responses to critiques, adjustments, and commentary presented in the Defendant’s Expert Reports.
- (6) In forming the opinions expressed in this report, I relied on my education, experience, and knowledge of the subjects discussed. An updated version of my curriculum vitae and list of my prior expert testimony is set forth in Reply Attachment A-1. In addition to the materials I relied on in preparation of my Opening Report, I also rely on materials which are listed in Attachment A-2 to my Opening Report and/or cited herein and/or listed in Reply Attachment A-2 to this report. The materials I considered include the depositions of Dr. Chiou and Dr. Langer in which they provide further explanation of their analysis and clarification of their opinions.⁵
- (7) My analysis is ongoing, and my conclusions are based on information currently available to me. If any additional information or testimony—including from any of the other experts in this matter—become available to me, I reserve the right to consider such information and to supplement this report and my opinions, as appropriate. I also reserve the right to supplement my report based on any additional fact discovery, analysis and opinions set forth by other experts, and/or trial testimony, and to respond to other experts and the testimony of any fact witnesses.

⁴ Class Certification Expert Report of Lesley Chiou, Ph.D. (“Chiou Report”), 5/17/2024.

Class Certification Expert Report of Ashley Langer, Ph.D. (“Langer Report”), 5/17/2024.

I note that on June 10, 2024, Dr. Chiou submitted a corrected version of her report along with errata. For purposes of my reply report, I incorporate those edits into her originally submitted report and reference her May 17, 2024 submission throughout. See:

Corrected Class Certification Expert Report of Lesley Chiou, Ph.D., 6/10/2024.

Errata to the Class Certification Expert Report of Lesley Chiou, Ph.D., 6/10/2024.

⁵ Lesley Chiou, Dep. Tr., 6/18/2024.

Ashley Langer, Dep. Tr., 6/21/2024.

- (8) In addition, should I be asked to testify to my opinions at the trial of this matter, I reserve the right to prepare exhibits that summarize portions of my analysis and my opinions and to prepare demonstrative exhibits that help to explain elements of my analysis and opinions. I have yet to select any exhibits I may ultimately use. In addition, I reserve the right to use animations, demonstratives, enlargements of actual attachments, and other information to help me convey my opinions.
- (9) The entirety of my Opening Report and this reply report, including attachments, backup materials, and referenced/considered materials, supplies the basis for my analysis and conclusions to date. The organizational structure of this report is for convenience. To the extent that facts, economic analysis, and other considerations overlap, I generally discuss such issues only once for the sake of brevity. Neither the specific order in which each issue is addressed nor the organization of my report or attachments affects the outcome of my analysis.

1.2. Overview of Schwartz Opening Report

- (10) In my Opening Report, I present my analysis and conclusions regarding the questions set out in my assignment. A summary of my principal conclusions of my Opening Report is set forth here.⁶
- a. Valve’s pricing and content policies function as a platform most favored nation policy (“PMFN Policy”). Valve enforces the PMFN on both pricing and content, including by delisting titles from Steam that do not adhere to the PMFN Policy.
 - b. The relevant antitrust market for purposes of my analysis is a worldwide market for third-party digital PC game distribution via platforms.
 - c. Valve has monopoly power in the relevant market, evidenced by its high and sustained market share, high and sustained profitability, and Valve-imposed barriers to entry to the market through the PMFN Policy, all of which allow Valve to charge a supracompetitive rate to publishers. Valve’s monopoly power harms competition in the market, including through its ability to set and sustain that supracompetitive price to publishers, deter entry and/or reduce the competitiveness of potential platforms, and reduce the variety, choice, and innovation in the market.
 - d. Valve’s exercise of its monopoly power—through its enforcement of the Steam PMFN Policy—has harmed and continues to harm competition in the market, by enabling Valve to set and sustain supracompetitive prices, reduce output, and reduce variety, choice, and innovation in the market.

⁶ Schwartz Opening Report, 2/8/2024, § 2.

- e. Valve’s exercise and maintenance of its monopoly power has harmed and continues to harm putative class members, *i.e.*, the publishers listing their games on Steam.
- f. Absent the PMFN Policy, vigorous competition would exist within the market, leading to lower, more competitive commission rates for all or virtually all class members. This conclusion is supported by analyses based on several different analytical methods, including: (1) my Platform Competition Model, (2) my yardstick analysis, and (3) my empirical analysis. My Landes and Posner model—used for damages—further confirms my conclusion that all or virtually all class members are harmed.
- g. Absent the PMFN Policy, the lower commission rates would result in publishers passing through some savings from the lower commission rates to consumers in the form of lower game prices. Lower fees to publishers and lower prices to users result in a net lower price across the platform.
- h. Absent the PMFN Policy, the but-for commission rate would be 17.7%, resulting in class-wide damages of between \$2.9 billion and \$3.1 billion.
- i. The issues I analyze in this case can be analyzed using evidence common across putative class members. In particular, damages from the commission overcharge can be calculated in a formulaic way using standard economic approaches that rely on evidence common to the putative class.

1.3. Overview of Chiou and Langer Reports

- (11) Dr. Chiou stated that she was “asked by counsel for Valve to analyze Plaintiffs’ allegations in their Complaint and the information, methods, and opinions in” my Opening Report.⁷ Dr. Chiou stated that she answered the following questions: “Do Plaintiffs and their experts propose reliable economic methodologies to”: (1) define a relevant market and assess monopoly power; (2) establish the class-wide antitrust impact; and (3) estimate class-wide damages.⁸ Dr. Chiou also was asked to answer whether “Plaintiffs and their experts propose reliable economic methodologies that can be used to estimate class-wide damages[.]”⁹
- (12) Dr. Langer stated that she was “to analyze the economic validity of the claims made by Dr. Schwartz in his report with respect to his damages model, his Platform Competition Model, and his ‘yardstick approach.’ I have also been asked whether Dr. Schwartz’s analyses are capable of establishing class-wide harm and estimating damages using common evidence.”¹⁰

⁷ Chiou Report, 5/17/2024, ¶ 15.

⁸ Chiou Report, 5/17/2024, ¶ 15.

⁹ Chiou Report, 5/17/2024, ¶ 15.

¹⁰ Langer Report, 5/17/2024, ¶ 14.

- (13) Neither of Defendant's experts offered affirmative opinions in this matter. Instead, each of them only offers opinions that purport to respond to the analysis and conclusions set forth in my Opening Report. Both Dr. Chiou and Dr. Langer testified repeatedly that they did not reach and do not offer affirmative opinions and that doing so was outside the scope of their assignment and analysis.¹¹ It is clear, as a consequence, that what Dr. Chiou and Dr. Langer do is merely provide separate analyses in which each of them claim that it is uncertain whether the conclusions outlined in my Opening Report are correct. For each of their rebuttals, they do not affirmatively conclude one way or another whether their analysis leads them to different answers than I reached in my Opening Report. Even with that limited scope, their analyses do not undermine any of my conclusions. Their analyses are insufficient as a matter of economics and are unreliable, misleading, or both. More to the point, their analyses *cannot* be used to assert that anything in my report is incorrect, since they never reach that opinion, and their analyses cannot support such a conclusion.

¹¹ For Dr. Chiou, see, for example:

Lesley Chiou, Dep. Tr., 6/18/2024, at 46:23–48:14, 49:14–50:2, 53:17–54:1, 54:21–55:3, 58:7–15, 89:13–21, 101:8–15, 180:17–181:18, 259:16–24, 270:19–272:5.

For Dr. Langer, see, for example:

Ashley Langer, Dep. Tr., 6/21/2024, at 30:21–31:10, 32:16–20, 37:18–38:12, 39:4–20, 41:22–42:8, 62:8–21, 65:17–23, 171:19–172:2, 206:22–207:12.

2. Summary of Opinions

- (14) A summary of some of my principal conclusions is set forth here.
- a. Dr. Chiou’s critiques of the existence of Valve’s PMFN Policy are incorrect. There is ample common economic evidence of the existence and Valve’s enforcement of the PMFN Policy and the antitrust injury it causes.
 - b. Dr. Chiou’s ITAD pricing analysis has several flaws that render it misleading and unreliable. Her assumptions underlying this analysis are not grounded in the facts of this case or in economic principles. Her analysis does not and cannot show the effect of the PMFN Policy nor its impact on competition.
 - c. Dr. Chiou’s suggestions that I improperly excluded first-party platforms and distribution, console games, physical retail distribution, and regional platforms from the relevant market are incorrect and are based on a flawed, incomplete and unreliable analysis.
 - d. Dr. Chiou’s critiques of my market size and market share analyses are incorrect. Dr. Chiou’s own market size and market share analyses are based on inappropriate data and ignore economic evidence produced in this case. Her market size and market share estimates are improper.
 - e. Dr. Chiou’s and Dr. Langer’s critiques of my empirical and yardstick approaches are incorrect. My empirical and yardstick approaches demonstrate class-wide harm, and their critiques are based on analyses that are flawed and unreliable.
 - f. Individualized factors do not preclude class-wide harm, and individualized inquiry is not required to show class-wide antitrust injury.
 - g. Dr. Chiou’s and Dr. Langer’s Steam Keys effective rate analyses do not make economic sense and are unreliable and flawed. The existence of Steam Keys does not preclude class-wide harm.
 - h. My PCM is a well-defined model that shows class-wide antitrust impact from Valve’s PMFN Policy. The assumptions and simplifications that are necessary for this or any economic model are appropriate and align with the real-world facts of this case. Dr. Langer’s critiques of my PCM are unfounded and divorced from the factual reality of this case.
 - i. The damages model in my Opening Report is a reliable damages quantification that uses common evidence for the class, relies on the facts of this case, and is conservative in nature. My but-for market share estimates and pass-through analysis are appropriate and well supported. Dr. Langer’s critiques of my damages model (and associated analyses) are incorrect, misguided, and unreliable.

3. Economic Evidence of Valve’s Enforced PMFN Policy

(15) As discussed in detail my Opening Report, there is economic evidence that Valve has a PMFN Policy, which has both content and price parity elements.¹² There is also economic evidence that Valve enforces its PMFN Policy, including by contacting publishers that do not observe the PMFN Policy to implement and enforce its parity requirements.¹³ Valve’s enforcement is exclusionary and restrains effective competition in the relevant market, allowing Valve to set and sustain a supracompetitive commission rate.¹⁴ Dr. Chiou claims that I “fail[] to establish that Valve enforces a PMFN or that the alleged PMFN would affect publishers’ pricing and content decisions in a common matter” for a variety of reasons.¹⁵ However, Dr. Chiou does not demonstrate the absence of the PMFN Policy or the absence of enforcement.

3.1. Economic evidence of Valve’s PMFN Policy

(16) In Section 5.1.2 of my Opening Report, I explain that Valve’s PMFN Policy includes both content and price parity requirements and how these elements are articulated to developers through Valve’s SDA, Steamworks Documentation, and Valve’s communications with developers. Section 5.2 of my report includes numerous examples of Valve’s active enforcement of both price and content parity for full-games, downloadable content, and Steam Keys. In these sections of my Opening Report, I also present evidence that Valve employees

¹² Schwartz Opening Report, 2/8/2024, § 5.1.2, ¶ 150.

¹³ Schwartz Opening Report, 2/8/2024, § 5.2.

¹⁴ Schwartz Opening Report, 2/8/2024, §§ 5.1.3, 6.1.

¹⁵ Chiou Report, 5/17/2024, ¶¶ 281–284.

See, also:

Lesley Chiou, Dep. Tr., 6/18/2024, at 103:7–14. (“... I find that the evidence is inconsistent that Valve had a PMFN on a classwide basis.”)

Note that Dr. Chiou repeatedly states that she finds no “consistent” evidence of a class-wide PMFN. However, in her deposition she also states that “there is no evidence of a classwide PMFN.” See:

Lesley Chiou, Dep. Tr., 6/18/2024, at 129:11–24. (Emphasis added.)

See, also: Lesley Chiou, Dep. Tr., 6/18/2024, at 290:7–17.

Given the contradiction, I assume in these last instances, given the inconsistency with the other testimony, Dr. Chiou meant to state that she finds “inconsistent” evidence.

have confirmed that Valve has a PMFN Policy with both content and price parity elements that are regularly enforced.¹⁶

- (17) I have listed additional examples of Valve employees communicating parity requirements and enforcing the PMFN Policy in my Opening Report and in Reply Attachment B-1. This attachment lists examples of Valve's enforcement of content and price parity for products sold on Steam and Steam Keys between 2007 and 2022.

¹⁶ See Schwartz Opening Report, 2/8/2024, ¶¶ 150, 155–158, 165, 174, 186–187.

I also include some key examples from my Opening Report below.

Tom Giardino, a Steam Business Team member, described Valve's pricing parity requirement as "a platform goal that goes beyond Steam keys[.]" See: Valve, Emails Regarding Game Pricing, 7/23/2018–7/25/2018 (VALVE_ANT_0605887–89, at VALVE_ANT_0605887).

When asked about Valve's content parity requirements, Valve employee Augusta Butlin testified that "when working with partners, [she] want[s] to make sure that Steam users were treated fairly." See: Augusta Butlin, Dep. Tr., 10/11/2023, at 212:19–213:12. ("Q. You wrote: We ask that digital content you offer outside of Steam be made available to Steam users directly so that the Steam version is not disadvantaged. Did I read that correctly? A. Yes. . . . Is there anything that you see in that sentence that I just quoted that is not consistent with how you have communicated with developers about the spirit of the SDA? A. I, when working with partners, want to make sure that Steam users were treated fairly. This sentence is somewhat in that vein").

An internal Valve email states that "[w]e've just shipped the new [Steam] key request wizard documentation, along with a blog post on the dev[eloper] forums[.] . . . We've still got a lot of thinking and iterating to do around Steam key policy and communication, but hopefully this is the first in a number of steps towards making the key requesting process more clear and straightforward for developers and making sure Steam customers are being offered a fair deal and being treated fairly." See: Valve, Emails Regarding Steam Key Wizard, 4/5/2018–4/7/2018 (VALVE_ANT_0057676–78, at VALVE_ANT_0057678).

When publisher ██████ asked Valve if it could leave ██████ out of a discount it was planning to run, Valve told the publisher that "we don't want to be known as the store where ██████ prices are unfair. We've pursued this same policy with other partners [(developers)] and in other regions, to make sure Steam customers aren't put at an unfair disadvantage to customers shopping at retail or online at other stores." See: Valve, Emails Regarding ██████ Game Promotion, 1/21/2015–2/5/2015 (VALVE_ANT_0809427–434, at VALVE_ANT_0809428–429). (Emphasis in original.)

A drafted Valve announcement regarding new currencies on Steam asks publishers that "just make sure that you're not disadvantaging Steam customers; if you sell your game for £8.99 on another store, it shouldn't be £9.99 on Steam." See: Valve, Emails Regarding New Currencies on Steam, 7/9/2015–7/24/2015 (VALVE_ANT_0114214–20, at VALVE_ANT_0114215), available at Tom Giardino, Dep. Tr., 11/2/2023, Exhibit 187 (Emphasis added.)

Valve remarked in another email that "[i]f you wanted to sell a non-Steam version of your game for \$10 at retail and \$20 on Steam, we'd ask to get that same lower price or just stop selling the game on Steam if we couldn't treat our customers fairly[.]" and went on to confirm that this was not a new policy: "we've always asked that partners treat our customers fairly, and we've often opted not to promote games or stop selling them altogether if we aren't able to get fair treatment for our users." See: Valve, Emails Regarding Steam Key Guidelines, 6/28/2018–7/3/2018 (VALVE_ANT_0605087–89, at VALVE_ANT_0605087), available at Gabe Newell, Dep. Tr., 11/21/2023, Exhibit 349.

3.2. Valve's enforcement of the PMFN Policy leads to class-wide harm

- (18) Dr. Chiou argues that “[a]ssessing antitrust injury from the alleged PMFN is not possible without individualized inquiry into publishers’ knowledge of the alleged PMFN.”¹⁷ I disagree. The enforcement, or credible threat of enforcement,¹⁸ of the PMFN Policy enables Valve to maintain supracompetitive rates. In Section 7.5.2 of my Opening Report, I explain that selective enforcement can be used as a signaling device to present a credible threat of enforcement to publishers considering violating the PMFN Policy by offering lower prices or different content on a competing platform.¹⁹ Valve enforces the PMFN Policy against larger publishers to establish that the threat of removal from Steam is credible.²⁰ With these methods

¹⁷ Chiou Report, 5/17/2024, ¶ 316.

¹⁸ To be effective in constraining publisher behavior with respect to pricing and content, there need not be 100% deterrence. Indeed, much like police do not attempt to deter every speeder or the IRS does not audit every tax return, it is not rational for Valve to attempt to achieve 100% enforcement of the PMFN Policy. Enforcement of the policy on 100% of violations would be costly: Valve would incur significant monitoring, communication, and other administrative costs. Rather, for Valve to use the policy to limit effective platform competition in a more cost-effective manner, it uses a combination of other methods to establish threat credibility, severity of punishment, and enforcement selectivity to accomplish that goal. See:

Schwartz Opening Report, 2/8/2024, § 7.5.2.

¹⁹ Schwartz Opening Report, 2/8/2024, ¶¶ 320–323.

²⁰ Schwartz Opening Report, 2/8/2024, ¶¶ 183–184, 189–191, 194, 320–323.

See, for example:

Valve, Emails Regarding LNY Loyalty Program, 1/17/2019–1/19/2019 (VALVE_ANT_0053488–390, at VALVE_ANT_0053489), available at DJ Powers, Dep. Tr., 9/28/2023, Exhibit 45. (“[Redacted] retail stores are no longer much of a problem, but [Redacted] and other sites often eat into their own margin to present Steam titles at a discount. . . . In this situation, we usually reach out to the developer and explain that the price on [Redacted] makes the price on Steam look high. We believe this will result in regret purchases by Steam customers when that customer realizes they could have bought the same product elsewhere for less money. The ask from us to the partner is to match the lower price running on [Redacted].” The email explains that in the case where the developer does not run the same discount on Steam or remove the discount on [Redacted], Valve and the development partner “end up in a standoff. . . . In this situation, [Valve] often limits marketing of the title on Steam until the pricing is competitive among platforms.”)

Valve, Emails Between Valve and [Redacted], 12/22/2020–12/24/2020 (VALVE_ANT_2527325–28, at VALVE_ANT_2527325, VALVE_ANT_2527327–28). (Valve responds to a developer requesting to participate in Steam’s Winter Sale: “The sale team generally looks to big giveaways and bundles to avoid doing Steam front-page featuring that won’t make sense for players, so I think [Redacted] might be out of the running just from doing 100% off on [Redacted]. Later in the email chain, Valve states, “[w]e just have an ongoing rule-of-thumb re: let’s make sure our promos don’t look stupid. If PublisherX wants to sell a game at 80% off on [Redacted], and 50% off on Steam. . . we can’t stop them! But we’re not going to promote it until the Steam players get 80%, too. Holding off promo after humble bundles or epic giveaways is just an extension of that same behavior we’ve always had.”)

Valve, Emails Between Valve and [Redacted], 1/27/2020–3/25/2020 (VALVE_ANT_1192756–770, at VALVE_ANT_1192758). (In response to a developer’s request for a daily deal, Valve tells the developer that the “giveaway makes it really hard for us to market any compelling offer on Steam, at least any time in the near future. No bad blood on that, we know partners choose to do bulk payments for bundles and giveaways and we think y’all should pursue whatever offers are good for your business! But it does make it pretty impossible for us to turn around and advertise the game at

of establishing a credible threat, Valve influences publisher behavior at lower costs than full enforcement and is able to achieve the desired goal of limiting competition from other platforms.

- (19) Valve limits effective platform competition at lower costs by selective enforcement against the games most likely to lead to the cross-platform competition that Valve is trying to prevent. Potential competing platforms are most likely to gain a foothold in the market and threaten Valve’s dominance through the sale of high-revenue games, as this would drive consumers, and in turn, additional publishers to that platform. By preventing games from high-revenue publishers from competing effectively with offerings on Steam, Valve harms effective platform competition.²¹ Valve has enforced its PMFN Policy against large publishers of popular games such as [REDACTED], and others.²² As discussed in my Opening Report, even if only these large publishers were directly impacted by Valve’s PMFN Policy, that would take a major portion of the available commerce off the market for alternative platforms, depriving those alternative platforms of the volume they would need to succeed against Valve.²³ There is sufficient economic support of PMFN Policy enforcement in the record to show harm to platform competition. It is not necessary to conduct additional empirical studies of Valve’s PMFN Policy to reach that conclusion. Even if one were to assume,

33% off a month later or something if it was just free or pennies somewhere else.” Valve also states, “In terms of our relationship with customers, we’re not really comfortable pushing special promotions to them when we know we’re not actually competitive on price.”)

²¹ Schwartz Opening Report, 2/8/2024, § 7.5.2.

²² Schwartz Opening Report, 2/8/2024, ¶ 321.

See, for example:

Valve, Emails Between [REDACTED] and Valve, 6/6/2013–6/7/2013 (VALVE_ANT_1216044–45, VALVE_ANT_1216044). (“[T]his presents a problem for us on Steam. We want to make sure that our price on Steam is competitive with retail and other digital stores in [REDACTED] so that we do not teach customers that Steam is always the expensive option.”)

Valve, Emails Between [REDACTED] and Valve, 8/15/2014 (VALVE_ANT_2576464). (Valve tells [REDACTED] that it “[j]ust saw today that the pricing for [REDACTED] on Steam is uncompetitive with other retailers, similar to the issue we’re having with [REDACTED] and [REDACTED]. . . . We’ve made the choice to take the game down until we can reach price parity.”)

Valve, Emails Between [REDACTED] and Valve, 10/9/2017 (VALVE_ANT_2565882–84, at VALVE_ANT_2565883–84). (“Ultimately [REDACTED] retail strategy is yours to control in whatever way you see fit. However, it is our job as stewards of the platform is [sic] to protect Steam customers and to ensure that they are being treated fairly. We will not knowingly invite customer regret by offering your game at a premium to other retailers.”)

Valve, Emails Between [REDACTED] and Valve, 9/11/2020–9/18/2020 (VALVE_ANT_1193127–132, at VALVE_ANT_1193127–29). (“Yesterday it came to our attention that [REDACTED] was also on sale in [REDACTED] - with a significantly better discount - so we removed it from the pirate sale page.” Later in the chain, [REDACTED] added its central marketing teams “for discount parity rules and awareness” and assured Valve that “to be clear we know that discount parity is essential on both stores, [REDACTED]”)

²³ Schwartz Opening Report, 2/8/2024, ¶ 321.

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incorrectly, that Dr. Chiou's flawed ITAD analysis discussed below were proper and valid, my opinion that Valve's PMFN Policy harms platform competition would not change.

- (20) The methods that Valve uses to deter publishers from offering lower prices elsewhere include removal from the Steam platform. Valve threatens removal from Steam as a punishment for violations of the PMFN.²⁴ For example, in an email regarding a price discrepancy, Valve tells a developer that “[o]ur general attitude historically has been that if Steam customers don't get a fair shake from a publisher or developer, we just opt not to sell the game in question, rather than make a bad offer that erodes user trust in the store.”²⁵ Similarly, an internal email illustrates that Valve has utilized this strategy with multiple developers: “We're going to remove the purchase offer for ██████ in ██████ today. We've asked ██████ to list a competitive price to what we're seeing at other retail outlets, and they've said they are unable to do so. The new ██████ is in a similar position, and Ricky is talking through solutions with ██████.”²⁶ Also, in internal discussions regarding a developer violating price parity, a Valve employee's “simple and straightforward” response was to threaten removal from Steam: “Our goal is to make sure Steam customers get treated fairly, so if you couldn't make an equivalent offer to customers on Steam, we'd choose not to sell the game.”²⁷ Such a punishment has the potential effect of putting many publishers out of business.²⁸ Valve has substantial market power and there are few alternatives for publishers to turn to for distribution and none with the user base and network effects that Steam has amassed through the exclusionary effects of the PMFN.²⁹ Without Steam as an option for distribution, sales of a publisher's game would

²⁴ For additional examples, see:

Valve, Emails between ██████ and Valve, 7/3/2017–7/11/2017 (VALVE_ANT_0923766–774, at VALVE_ANT_0923771). (“Our concern is making sure our Store makes a great offer to our customers. So, if the game is more expensive on our store than other stores, we'd want to either offer the game at that better, lower price, or stop doing business together.”)

Valve, Emails Between ██████ and Valve, 6/28/2013–7/12/2013 (VALVE_ANT_0048944–49, at VALVE_ANT_0048944, VALVE_ANT_0048946). (From Valve: “The pricing in ██████ looks to be offered at ██████. To be in parity with ██████, we'd like to offer the pre-purchase at ██████. If we can't be in parity ██████ then we can just not sell there, but that does leave a lot of money on the table.” In response from ██████: “We accept to reduce the SRP and apply the new following prices in ██████”)

²⁵ Valve, Emails Regarding ██████ ██████, 12/22/2016 (VALVE_ANT_0127888–89, at VALVE_ANT_0127888).

²⁶ Valve, Emails Regarding ██████ Price Parity, 9/22/2015–10/1/2015 (VALVE_ANT_0051718–19, at VALVE_ANT_0051718).

²⁷ Valve, Emails Regarding ██████ ██████, 2/8/2018–2/15/2018 (VALVE_ANT_1186878–79, at VALVE_ANT_1186878).

²⁸ See, for example:

John Robb, Dep. Tr., 11/28/2023, at 27:17–28:3, 289:19–291:4.

²⁹ See also:

decline, perhaps sharply, endangering the viability of the game (or the publisher). The extreme severity of this punishment would deter violation of the PMFN Policy, all else equal.³⁰

- (21) As discussed in Section 6.2 of my Opening Report, Valve’s PMFN Policy limits the ability of entrants to successfully compete. The PMFN Policy forecloses publishers from offering lower prices or differentiated content on alternative platforms.³¹ In turn, this forecloses potential rival platforms from offering incentives such as lower prices or differentiated content to compete with Steam, thereby removing the most potent competitive options available to rivals seeking to challenge Steam.³² Even if a rival platform offers publishers a lower commission rate, such publishers cannot offer their games at a lower price on that platform.³³ An alternative pathway for potential competing platforms would be to convince publishers to publish exclusively on their platforms, leaving Steam. However, this also prevents publishers from being able to sell to Steam’s substantial user base, limiting the ability of such publishers to generate substantial revenues.³⁴ Thus, it is unlikely that potential rival platforms would be able to attract sufficient publishers (or users) to build up network effects. Indeed, Epic has attempted this strategy and has not undermined Valve’s monopoly power.³⁵ Therefore, the combination of Valve’s PMFN Policy and monopoly power limit effective competition. This reduced competition enabled by the PMFN Policy enables Valve to charge and sustain a supracompetitive commission rate. Consequently, all publishers distributing games through Steam are impacted by the overcharge resulting from the PMFN, regardless of whether the PMFN is enforced 100%.³⁶ And any given publisher in the class was injured, even if that publisher was not the victim of PMFN enforcement because that publisher paid inflated commissions to Valve. Absent the PMFN, “[g]iven Valve’s imposition of a standard pricing structure for publishers, if the PMFN policy is eliminated, the default commission rate would

Jason Owens, Dep. Tr., 12/5/2023, at 335:13–22. (“Q. And where did the idea of Valve as a monopolist come from? THE WITNESS: Through our research and attempts to find another viable platform to release on. We realized there was no platform that had a user base strong enough to even pay for our -- the game we had existing. Like, there’s not enough people on VIVEPORT to care. There was no way we’d ever even recoup the cost of the game outside of Valve.”)

John Robb, Dep. Tr., 11/28/2023, at 289:19–291:4.

³⁰ Schwartz Opening Report, 2/8/2024, §§ 5.2, 7.5.2.

³¹ Schwartz Opening Report, 2/8/2024, ¶ 206.

³² Schwartz Opening Report, 2/8/2024, ¶ 206.

³³ Schwartz Opening Report, 2/8/2024, ¶ 212.

³⁴ Schwartz Opening Report, 2/8/2024, ¶ 207.

³⁵ Schwartz Opening Report, 2/8/2024, ¶¶ 208–209.

³⁶ Even for publishers with [REDACTED], publishers are affected as even [REDACTED] are predicated on supracompetitive rates set by Valve, and as such, are supracompetitive themselves.

fall and that would benefit *each* publisher.”³⁷ Thus, in a world without the PMFN Policy, all, or virtually all, class members would be better off, and the harm is common to all publishers and is quantifiable through common evidence.³⁸

3.3. Dr. Chiou’s ITAD pricing analysis does not and cannot show effect of PMFN Policy on competition

- (22) Dr. Chiou claims that I have failed “to establish that Valve enforces a PMFN or that the alleged PMFN would affect publishers’ pricing and content decisions in a common manner.”³⁹ In her analysis, she compares pricing of games and other products across distribution outlets over time using third-party pricing data from Is There Any Deal (“ITAD”).⁴⁰ Her analysis demonstrates a basic misunderstanding of how the Steam platform operates and how its PMFN Policy forecloses effective competition for Valve. That flawed misunderstanding leads to numerous critical errors in her analysis that render it unreliable.
- (23) As described above, the PMFN Policy limits the ability of potential rival platforms to compete effectively with Valve via price competition or content differentiation. Rather than attempt to achieve 100% compliance at a high cost, Valve can achieve its anticompetitive objectives at a lower cost by selective and targeted enforcement of its price and content parity requirements—focusing on the games and publishers that are most likely to have the largest negative impact on Steam’s dominance. This behavior makes the threat of full removal from Steam credible to publishers. Valve’s selective enforcement is effective because of Valve’s focus on key games and key publishers that would provide potential rival platforms with the ability to compete effectively.
- (24) Further, Dr. Chiou’s analysis cannot capture non-price impacts of Valve’s PMFN Policy on publishers, such as disincentivizing publishers from offering their games on other stores (multihoming). As such, no reliable conclusions about the effects of Valve’s PMFN Policy can be drawn from her ITAD study.

³⁷ Schwartz Report, 2/8/2024, ¶ 242. (Emphasis added.)

³⁸ Schwartz Report, 2/8/2024, ¶ 12. (“[D]amages from the commission overcharge can be calculated in a formulaic way using standard economic approaches that rely on evidence common to the putative class.”)

³⁹ Chiou Report, 5/17/2024, ¶ 281.

⁴⁰ Chiou Report, 5/17/2024, § 7.

- (25) Dr. Chiou ignores the fact that a major impact of the PMFN is the disincentive it creates for publishers to multihome. However, even for the games that are multihomed, Dr. Chiou’s analysis is flawed and unreliable. Her data validation process is inadequate, her reliance on the comparison of available prices obscures important marketplace realities, and her pricing threshold is arbitrary and not justified by the facts of the case or any economic principle. Beyond that, her analysis ignores that not every game affects potential rivals’ ability to compete effectively against Valve in the same way or to the same extent, and that Valve is more likely to enforce the PMFN Policy on those games. Her analysis weights all games (and non-games) equally, simply tallying up a count without consideration of their respective likely impacts on competition. She fails to consider Valve’s selective enforcement, and thus her analysis cannot show the effect of the PMFN on competition.

3.3.1. The share of games offered on multiple stores is relatively small

- (26) Dr. Chiou’s analysis is unreliable because there is no basis to generalize her results to the larger universe of games on the Steam platform. Her analysis fails to consider the impact of publisher multihoming decisions on her results. If the PMFN is effective (and it is), there is little multihoming. That means that relatively few games are available on multiple platforms, and Valve’s PMFN Policy accomplishes one of its primary goals of deterring game placement on rival platforms and deterring effective competition from those platforms. As an economic matter, Dr. Chiou’s focus on her price comparisons leads her to ignore the critical fact that the success and anticompetitive impact of the PMFN is established before she begins her flawed cross-platform price comparisons. She ignores the fact that, by preventing multihoming, the PMFN Policy precludes the possibility of meaningful and effective competition from rival platforms.⁴¹
- (27) Dr. Chiou’s pricing analysis, in which she compares pricing among games and non-games offered on Steam and other stores, is focused on a small set of products.⁴² These products are not broadly representative of products distributed on Steam. They account for only a small share of the products offered on Steam.
- (28) To determine the extent of multihoming, I compare the number of packages in Dr. Chiou’s analysis to the number of unique packages sold on Steam during the same time period. Dr.

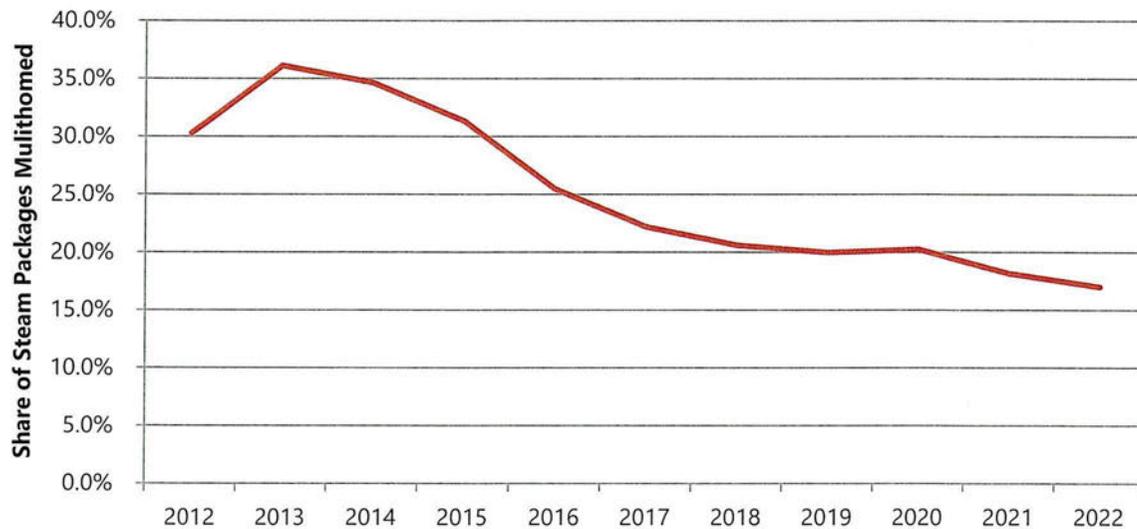
⁴¹ See Section 3.2 for further discussion.

See also: Schwartz Opening Report, 2/8/2024, § 5.1.3.

⁴² See “11_Multihoming.R”.

Chiou identifies 25,723 unique items (games and downloadable content (“DLC”), a flawed metric in its own right) that are multihomed;⁴³ this represents only 20.33% of the 126,549 unique items offered on Steam during this time.⁴⁴ As displayed in Figure 1 below, the share of multihomed games has generally decreased since 2013, *even with the entrance of EGS in 2018*.⁴⁵

Figure 1: Share of Steam Packages Multihomed Over Time⁴⁶



- (29) This trend is a natural consequence of Valve’s PMFN Policy, which is a critical element of Valve’s effort to limit effective platform competition. In Section 5.1.3 of my Opening Report, I established that, absent the PMFN Policy, potential rival platforms would compete with Steam by offering publishers lower commission rates. That would, in turn, lead to lower consumer prices, thus driving consumers to the rival platforms.⁴⁷ However, absent the ability to offer lower prices on competing platforms, publishers’ ability to drive consumers to a rival platform is limited, which, in turn, minimizes the ability of rival platforms to compete. The decrease in

⁴³ Chiou Report, 5/17/2024, ¶ 290.

⁴⁴ See “11_Multihoming.R”.
25,723 / 126,549 = 20.33%

⁴⁵ Epic Games, “The Epic Games Store is Now Live,” 12/6/2018, <https://store.epicgames.com/en-US/news/the-epic-games-store-is-now-live>.

⁴⁶ Reply Attachment D-1.

⁴⁷ See Schwartz Opening Report, 2/8/2024, § 8.4 for further discussion.

the rate of multihoming over time reflects the effectiveness of Valve's enforcement of the PMFN Policy over time.

- (30) Dr. Chiou ignores this entirely. She fails to consider the possibility that the limited, declining multihoming observed in the real world is the result of Valve's PMFN Policy. Thus, Dr. Chiou's analysis is unreliable and cannot support reliable economic inferences. Further, she overlooks that the overwhelming proportion of products on Steam that are not multihomed comply with Valve's PMFN Policy by definition. She does not model or even consider the possibility that many of those roughly 80% of Steam games would likely engage in some degree of multihoming in the but-for world, allowing rival platforms to be competitive alternatives to Steam.

3.3.2. Dr. Chiou has not established the accuracy of her ITAD data

- (31) Dr. Chiou's analysis depends on the reliability of the ITAD data. Her analysis is unreliable because she cannot assure the accuracy of the data she analyzes. In Dr. Chiou's report appendix, she discusses her effort to validate the ITAD dataset by merging on the Valve package revenue data.⁴⁸ Dr. Chiou's validation is limited not only to Steam prices, but also to the "top 100 games by revenue."⁴⁹ Dr. Chiou finds that "27,662 observations in this ITAD sample match prices in the Valve package revenue data" and that "the price in the Valve package revenue data agrees with the previous reported price change for that same game in the ITAD data for an additional 2,728 observations."⁵⁰ In doing so, Dr. Chiou "obtain[s] a match rate of 92 percent,"⁵¹ leaving 8 percent of observations across the top 100 games by revenue unmatched. There are several problems with this ostensible validation effort.
- (32) First, Dr. Chiou only validated 27,662 observations in her sample of 11,341,345 observations, meaning that 99.76% of her total observations were not validated.⁵² Since her sample of games is not randomly or otherwise statistically generated, there is no basis for extending her results to the data set at large. Moreover, her validation is only among a small sample of games in a

⁴⁸ Chiou Report, 5/17/2024, Appendix 18.

⁴⁹ Chiou Report, 5/17/2024, ¶ 488.

⁵⁰ Chiou Report, 5/17/2024, ¶¶ 489–491.

⁵¹ Chiou Report, 5/17/2024, ¶ 491.

⁵² Chiou Report, 5/17/2024, ¶ 482, 489.

$(11,341,345 - 27,662) / 11,341,345 = 99.76\%$.

specific year.⁵³ Dr. Chiou did not validate the data from other stores, data for games outside the top 100, or data from years other than 2022.⁵⁴ This is a serious methodological flaw that undermines her analysis and renders her results unreliable. There is no economic or statistical basis to conclude that a validation of 0.24% of the data (not drawn randomly or by any other statistical principle) would apply to the other 99.76% of the data sample.⁵⁵ Indeed, one would expect reported prices for products on Steam to be more accurate than reported prices on much smaller stores. Since she does not validate the accuracy of the data from other sources, her results are statistically meaningless and not the basis for any reasonable claim of statistical validity.

- (33) Further, within the 0.24% of observations she did attempt to validate, she did not make any effort to correct for non-matching observations or otherwise modify her pricing data to account for the unmatched observations. These 8% of unmatched observations are included in her analyses concerning discrepancies in game prices between Steam and other platforms, and ultimately influence her critiques that utilize the ITAD pricing data across her report.⁵⁶ This is a sufficient economic basis to conclude that her analysis is not reliable.

3.3.3. Dr. Chiou's use of windows to compare average prices across platforms obscures key factors

- (34) There is another fundamental flaw in Dr. Chiou's analysis that renders it economically and statistically unreliable. In her pricing analysis, Dr. Chiou examines the time period in which a game is available on both Steam and another platform. She then calculates a single average price on each platform across all the games during this time window.⁵⁷ She compares this single average price, calculated across the time window, to determine whether a game is

⁵³ Chiou Report, 5/17/2024, fn. 832.

⁵⁴ Lesley Chiou, Dep. Tr., 6/18/2024, at 142:5–143:6, 144:15–145:22.

⁵⁵ $(11,341,345 - 27,662) / 11,341,345 = 99.76\%$.

$100\% - 99.76\% = 0.24\%$

⁵⁶ Dr. Chiou completes her validation process and notes that she "obtain[s] a match rate of 92 percent" by examining "where the ITAD price and Valve package revenue price agree for that day" and "where the Valve package revenue data agrees with the previous observation in the ITAD data." She does not claim to take steps past this validation to remove unmatched observations. See:

Chiou Report, 5/17/2024, ¶ 491.

⁵⁷ Chiou Report, 5/17/2024, ¶ 291. ("I calculate average prices by weighting the price offered to consumers by the number of days that price is offered. This returns a weighted average of prices on days when a game was offered for its base price and on days when a sales event occurred.")

offered at a different price on another platform than it is on Steam.⁵⁸ Such an analysis oversimplifies pricing dynamics and ignores the effect enforcement may have on pricing on alternative platforms.

- (35) The majority of video game sales on Steam occur while games are on sale. Between 2017 and 2022, most units sold on Steam were sold at transaction prices below the base (listed) price (ranging between [REDACTED] and [REDACTED] of units sold). See Table 1. Dr. Chiou also acknowledges the relationship between transaction price and units sold, noting that “[REDACTED] percent of all units sold on Steam in 2022 occur[ed] when the transacted price was lower than the base price.”⁵⁹

Table 1: Share of Steam Sales at Discounted Prices⁶⁰

Year	Share of Units Discounted
2017	[REDACTED]
2018	[REDACTED]
2019	[REDACTED]
2020	[REDACTED]
2021	[REDACTED]
2022	[REDACTED]

- (36) Dr. Chiou ignores this phenomenon entirely. Her use of a single average price weighted by the number of days ignores this critical feature of game sales.⁶¹ In Dr. Chiou’s analysis, she implicitly assumes that the count of games purchased on each day is equal. For example, if a game is priced across a five-day window at prices of \$1, \$3, \$3, \$4, and \$4, Dr. Chiou’s method would result in an average price of \$3 over that five-day window. However, it is likely that a large share of purchases during that window occurred at the \$1 price rather than at the median price. She ignores the reality that consumers overwhelmingly purchase games on

⁵⁸ Chiou Report, 5/17/2024, ¶¶ 290–294.

⁵⁹ Chiou Report, 5/17/2024, ¶ 291.

⁶⁰ See: “08_Sales.R”. Unit and transaction shares are derived from Steam units and transactions within the damages period, are exclusive of in-app purchases and hardware, and inclusive of Valve sold units and transactions to mirror the analysis performed by Dr. Chiou.

For a breakdown of revenues, see: “08_Sales.R”.

⁶¹ Chiou Report, 5/17/2024, ¶ 291.

sale and disconnects her analysis from both the reality of the market and the facts of the case. It means her averaging methodology will yield skewed and misleading results.

- (37) Dr. Chiou's use of average prices for a single game also overemphasizes the duration of a discount relative to the magnitude of the discount.⁶² For example, a \$5 game priced at \$5 for five days and \$4 for five days on an alternative platform would have a lower average price as that same game priced at \$5 for nine days and \$2 for one day on Steam. According to Dr. Chiou's analysis, the average price off Steam would be lower and this would be flagged as a violation of the PMFN Policy. However, the magnitude of a discount (particularly on Steam) is more important than the duration of discounts. Due to Steam's dominant position in the market, a substantial discount, even if it is offered for a single day, is likely to reach more potential customers and lead to more purchases than a smaller discount offered for a longer period elsewhere. Dr. Chiou's failure to separate out the impacts of discount magnitude and duration is a serious error that further invalidates her analysis.
- (38) Further, Dr. Chiou's use of one average price per game per platform means her analysis is incapable of accounting for price changes that result from Valve's enforcement of its PMFN Policy. For example, suppose that, during a twenty-five-day window, (1) a publisher commits to offer a lower price off Steam for twenty-five days; (2) Valve contacts a developer on day twenty; and (3) the publisher raises the price for the remaining five days. Dr. Chiou's analysis would not be capable of capturing this change, as she uses one price across the entire twenty-five-day window. In this instance, Dr. Chiou's analysis would identify this as a violation of the PMFN Policy when the policy's enforcement is effective during her window.

3.3.4. Pricing analysis is based on an arbitrary price threshold

- (39) For her pricing analysis, Dr. Chiou compares game prices on Steam with the prices on other platforms, as described above. According to Dr. Chiou, "[i]f the average price for a game on a competing platform is lower than the average price on Steam, then the game must have been discounted on the competing platform more often, or the game must have been offered at a deeper discount on the competing store. Either of these would be evidence against a PMFN."⁶³ Specifically, Dr. Chiou uses a price difference threshold of 5% when comparing the pricing of

⁶² Chiou Report, 5/17/2024, ¶ 291.

⁶³ Chiou Report, 5/17/2024, ¶ 290. ("If the average price for a game on a competing platform is lower than the average price on Steam, then the game must have been discounted on the competing platform more often, or the game must have been offered at a deeper discount on the competing store. Either of these would be evidence against a PMFN.")

games on Steam and other platforms.⁶⁴ That is, if the price of a “game” on Steam, as measured by Dr. Chiou, is 5% or greater than the price off Steam, she interprets this as “evidence against a PMFN.”⁶⁵ Dr. Chiou’s selection of this 5% threshold is arbitrary—she fails to provide any justification for her selection of this 5% threshold and in fact testified that her analysis “shows 5 percent as an illustration.”⁶⁶ As explained below, her analysis is highly sensitive to alternative assumptions on the appropriate threshold. Her choice of an arbitrary and unsupported threshold drives her conclusion and thus is a methodologically inappropriate choice.

- (40) There is no economic logic to the choice of 5%. No economic theory or principle, when applied to the facts of the case, supports the use of a 5% threshold. Dr. Chiou offers no rationale for the choice of 5%, and there is little doubt that the choice is entirely arbitrary. The choice matters. Alternative assumptions on the appropriate threshold to use in comparing pricing across platforms demonstrate that Dr. Chiou’s results are heavily driven by her utilization of a 5% threshold. For example, utilizing a 10% threshold lowers the average percentage of “games” flagged in Dr. Chiou’s analysis by 37.2%.⁶⁷ Utilizing a 15% threshold lowers the average percentage of “games” flagged in Dr. Chiou’s analysis by 53.0%.⁶⁸ These alternative thresholds demonstrate that Dr. Chiou’s conclusion is highly sensitive and heavily driven by her adoption of an arbitrary, unsupportable 5% threshold.

3.3.5. Pricing analysis lacks a nexus to games most relevant to platform competition

- (41) While Valve and I (and others) recognize that certain games are more relevant to the success of Steam and of potential rival platforms, Dr. Chiou ignores this factor in her analysis, she

⁶⁴ Chiou Report, 5/17/2024, ¶ 290.

⁶⁵ Chiou Report, 5/17/2024, ¶ 290. (“Then I calculate the percentage of games with average prices that are at least 5 percent lower on the competing platform compared to Steam. I use this measure to test for the effect an alleged PMFN would have. If the average price for a game on a competing platform is lower than the average price on Steam, then the game must have been discounted on the competing platform more often, or the game must have been offered at a deeper discount on the competing store. Either of these would be evidence against a PMFN.”)

⁶⁶ Lesley Chiou, Dep. Tr., 6/18/2024, at 124:22–125:21.

⁶⁷ $(16.21\% - 10.19\%) / 16.21\% = 37.16\%$

See: “12_Thresholds_Sockventure_DLC.R”.

⁶⁸ $(16.21\% - 7.63\%) / 16.21\% = 52.96\%$

See: “12_Thresholds_Sockventure_DLC.R”.

██████████ states that “content is the most important factor in the success of a gaming platform.”⁷⁶

- (43) The economic literature on platform economics widely notes that a key challenge facing platforms is attracting users on both sides of the platform. This is often referred to as the “chicken-and-egg” problem: “getting both sides on board, in adequate numbers, to create value.”⁷⁷ One tactic that a platform can employ to combat the chicken-and-egg problem is to attract “anchor tenants” which are “significant customers that help[] attract other customers to the platform[.]”⁷⁸ Attracting such customers to one side of the platform helps overcome the chicken-and-egg problem by creating strong indirect network effects which drive the platform to achieve critical mass—a state in which the platform has attracted a sufficient number of users on both sides of the platform to fuel sustainable growth.⁷⁹ Platforms “typically need to attain critical mass when they are launched in order even to survive.”⁸⁰
- (44) Despite this, Dr. Chiou’s analysis is not focused on the games most relevant to platform competition. Instead, she weights all products in her sample equally.⁸¹ Given the small sample of games in her analysis due to the general lack of multihoming, this results in over-weighting competitively inconsequential games and, thus, her analysis is not representative of the games most relevant to platform competition.

Pricing analysis is based on older games

- (45) A key determinant of a game’s economic and competitive importance to a platform is the game’s age. Dr. Chiou ignores this, as well. Typically, a game’s monthly revenues peak in the

⁷⁶ ██████████ 12/2015 ██████████

⁷⁷ Evans, David S. and Richard Schmalensee (2016), *Matchmakers*, Boston, MA: Harvard Business Review Press, at 36.

⁷⁸ Evans, David S. and Richard Schmalensee (2016), *Matchmakers*, Boston, MA: Harvard Business Review Press, at 207.

⁷⁹ A critical mass is defined as the “minimum sets of participants for the platform sides that are necessary for the platform to ignite – that is, have self-sustaining growth.” See:

Evans, David S. and Richard Schmalensee (2016), *Matchmakers*, Boston, MA: Harvard Business Review Press, at 80, 207, 210.

⁸⁰ Evans, David S. and Richard Schmalensee (2010), “Failure to Launch: Critical Mass in Platform Economics,” *Review of Network Economics* 9(4): 1–26, at 22.

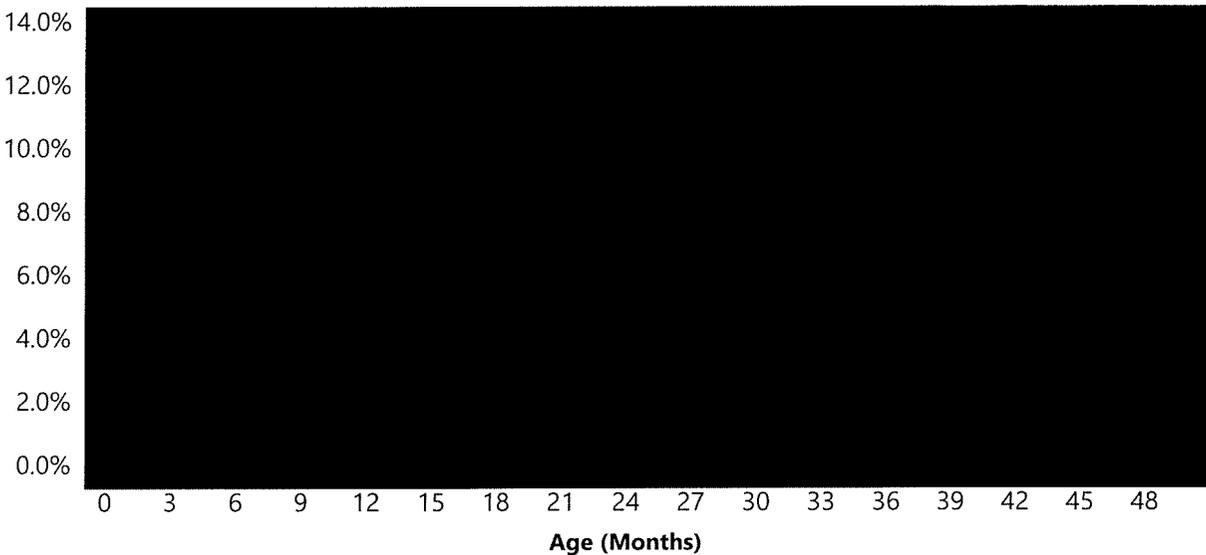
Evans, David S. and Richard Schmalensee (2016), *Matchmakers*, Boston, MA: Harvard Business Review Press, at 36.

(“Multisided platforms have to secure critical mass in order to ignite. They have to solve the chicken-and-egg problem of getting both sides on board, in adequate numbers, to create value. If they don’t, they will implode. If they do, indirect network effects will generally fuel sustainable growth.”)

⁸¹ Chiou Report, 5/17/2024, ¶¶ 290–293.

first month following the game's release and decrease quickly afterward. Thereafter, a game's monthly revenues are ordinarily expected to decline in each subsequent month before eventually reaching a steady state.

Figure 2: Monthly Share of Lifetime Revenues by Game Time Since Release



(46) If games are likely to generate fewer and fewer revenues each month following release, the period during which a game generates the highest monthly revenues—typically in the first few months following release—is the most important period competitively. That is the period of time to consider when evaluating whether price differences are likely to engender an enforcement response from Valve. Price parity is much more important to Steam during this period immediately after release than later in the game's life cycle when the game's drawing power is, all else equal, reduced. Dr. Chiou fails to account for this. Unsurprisingly, the majority of her purported PMFN violations are found outside of the first few months of a game's life cycle.

(47) Of the games flagged in Dr. Chiou's sample, her observations are overwhelmingly older and generally do not capture the peak revenues that follow immediately after release. In other words, she studies a set of games dominated by older games whose ability to drive purchases and users to a site (if it ever existed) is long past.⁸² This implies that her data are incapable

⁸² For example, of games within 4 years of release that were flagged as 5% or cheaper on Epic than Steam in Dr. Chiou's analysis, roughly 22% of the days considered were within the first year (12 months) of release (a timeframe in which the

of answering the question she purports to study. The most relevant period for platform competition is the period during which a game generates the majority of its revenues. Dr. Chiou's analysis does not focus on this period. Instead, her analysis considers price differences in a product's month of release to be equally important to price differences four years after a product's release. Differences in a game's pricing across platforms when the game generates only a small share of its lifetime revenues are less meaningful than price differences across platforms during a period in which the game generates the bulk of its revenues.

- (48) Dr. Chiou's failure to consider game life cycle pricing creates a disconnect between her comparative pricing analysis and any conclusions about the fact or impact of Valve's PMFN Policy on platform competition. As discussed above, her analysis is limited to a small sample of games (those that do multihome) and is heavily weighted towards older, stale games that do not meaningfully move the needle of platform competition. Thus, her analysis does not consider relative pricing for the most important games on Steam that are likely to be subject to enforcement.

Pricing analysis is focused on lower-priced games

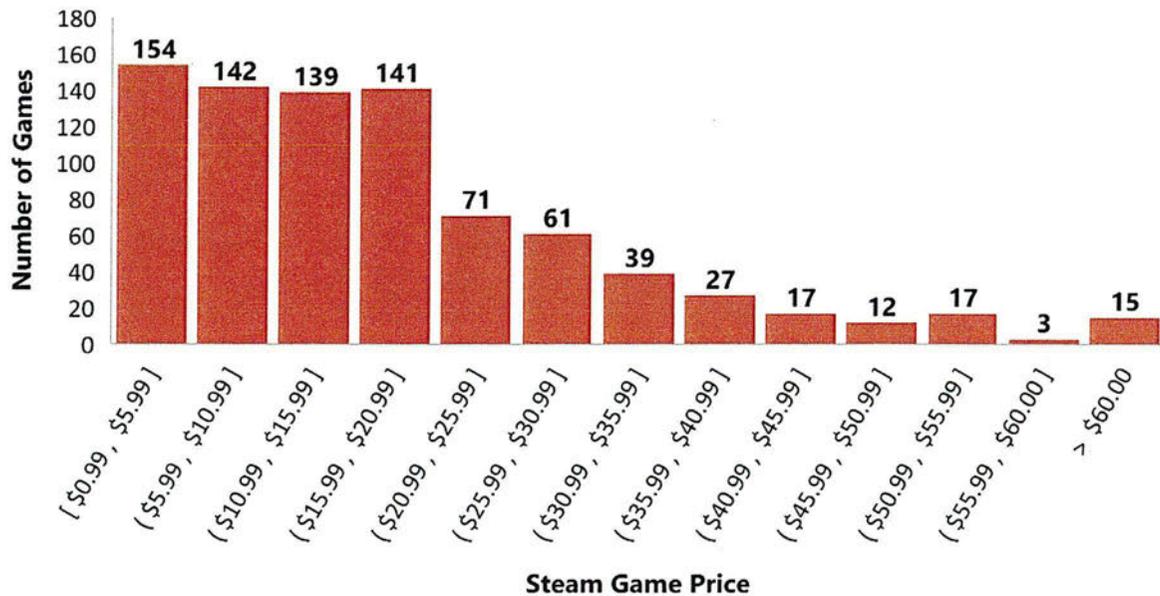
- (49) By examining the average Steam prices for games that Dr. Chiou studies, I derive further evidence that Dr. Chiou's analysis is skewed and insufficient to support the conclusions she draws is seen. This evidence makes it clear that her sample is not representative and is skewed and biased. More than half of Dr. Chiou's result is driven by games with an average Steam price of \$15.99 or less. These less expensive games are less relevant to platform competition; they are generally associated with lower revenues than more expensive games. For that same reason, these cheaper games are also less likely to be identified as candidates for PMFN Policy enforcement. Between January 28, 2017, and December 31, 2022, transactions on Steam at or below \$15.99 generated ██████████ of the platform's total U.S. revenue and just over ██████████ of the number of U.S. transactions.⁸³ In other words, these games are less relevant to platform competition than are higher-priced games. However, Dr. Chiou's analysis is weighted towards these less relevant games.

PMFN would be more likely to be enforced), while the remaining 78% were between 1 and 4 years (over 12 months) old. See: "10_Game_Age_Monthly_Revenues.R".

⁸³ During this period, transactions on Steam at or below \$15.99 generated ██████████ of the platform's total U.S. revenue in USD, excluding hardware and in-app purchases. Of all transactions excluding hardware and in-app purchases made in the U.S. (in U.S.D.), roughly ██████████ of units were sold at a price under \$15.99. See: "09_Average_Prices_ITAD_Analysis_Flagged_Games.R".

- (50) Figure 3 below shows the average Steam price of games Dr. Chiou identifies as at least 5% cheaper on EGS. 52% of the games Dr. Chiou identifies as at least 5% cheaper on EGS have an average Steam price of \$15.99 or less.⁸⁴

Figure 3: Average Steam Prices of Games Dr. Chiou Identifies as 5% Cheaper on EGS⁸⁵



- (51) As a specific example, Dr. Chiou’s analysis identifies the game *Sockventure* as a game that is at least 5% less expensive on EGS than Steam. On Steam, *Sockventure*, generally priced at \$14.99 in the U.S., has generated ██████████ in revenue over the life of the game.⁸⁶ Given compliance costs, it would be surprising if Steam took steps to enforce the PMFN with respect to this game since non-compliance is financially and competitively inconsequential. Dr. Chiou does not recognize that Valve faces different incentives when deciding if it will enforce the PMFN for different games: enforcement for lower-priced games will generate less of a benefit for Valve than enforcement for higher-priced games as lower-priced games generate comparatively lower revenues than higher-priced games. Dr. Chiou’s failure to consider the price of the games demonstrates the disconnect between her analysis and the impact of the PMFN Policy on platform competition.

⁸⁴ Games priced, on average, under \$15.99 U.S.D. $(154 + 142 + 139) / \text{total games flagged as 5\% cheaper on Epic (838)} = 51.9\%$. See Figure 3 and Reply Attachment D-1.

⁸⁵ See Reply Attachment D-2.

⁸⁶ See: “12_Thresholds_Sockventure_DLC.R”.

Pricing analysis includes non-game products

- (52) Non-game items such as DLC and soundtracks typically are not playable on a platform other than the one on which the initial game was purchased, and thus platforms do not compete directly for their purchase.⁸⁷ They are, at a minimum, less relevant to platform competition than the games themselves and are, arguably, irrelevant to such competition. However, Dr. Chiou's analysis of ITAD data includes non-game items, such as DLC and soundtracks, and she weights them equally with games.⁸⁸ There is no economic support for this and reflects the disconnect between her analysis and an assessment of the impact of the PMFN Policy on platform competition.
- (53) A user cannot access DLC content on a platform such as Steam until she buys the base game associated with that DLC on the same platform (*e.g.*, Steam). To purchase DLC on a second platform (*e.g.*, EGS), that user must repurchase the base game on that second platform (*e.g.*, EGS). Thus, DLC pricing is not likely to be an economic driver to purchasing decisions or a meaningful competitive factor. A comparison of DLC prices across platforms is meaningless—users who wish to purchase DLC for a base game, all else equal, will shop only on the platform of their original purchase.
- (54) Dr. Chiou seemingly does not understand this requirement. She ignores (or does not understand) that users are “locked in” to the platform of their initial purchase and simply states that a user “can purchase [DLC a]cross different platforms.”⁸⁹ She confirms that her analysis includes DLC and “is looking at comparisons of the game, for example, or a package or a primary app across different platforms.”⁹⁰ This comparison makes no economic sense. Dr. Chiou mistakenly includes and assigns equal weight to games, DLC, and soundtracks, even though cross-platform price comparisons are meaningless. For example, Dr. Chiou identifies each of the following DLC items as “games” that “are at least 5 percent cheaper outside of Steam”: (1) *Cities: Skylines - All That Jazz*, (2) *Cities: Skylines – Concerts*, (3) *Cities: Skylines - Content Creator Pack: High-Tech Buildings*, (4) *Cities: Skylines - Content Creator*

⁸⁷ GOG, GOG Support Center – Can I Buy DLC for a Base Game I Own on Another Platform?, <https://support.gog.com/hc/en-us/articles/13829712050973-Can-I-buy-a-DLC-for-a-base-game-I-own-on-another-platform?product=gog> (accessed 6/25/2024).

Steam, Elden Ring: Shadow of the Erdtree, https://store.steampowered.com/app/2778580/ELDEN_RING_Shadow_of_the_Erdtree/ (accessed 6/25/2024). (Emphasis added.)

⁸⁸ See: “12_Thresholds_Sockventure_DLC.R”.

⁸⁹ Lesley Chiou, Dep. Tr., 6/18/2024, at 146:23–147:19.

⁹⁰ Lesley Chiou, Dep. Tr., 6/18/2024, at 147:10–148:1.

*Pack: Modern Japan, (5) Cities: Skylines - Downtown Radio, (6) Cities: Skylines – Parklife, (7) Cities: Skylines - Rail Hawk Radio, (8) Cities: Skylines - Relaxation Station, (9) Cities: Skylines – Sunny Breeze Radio, (10) Cities: Skylines - Sunset Harbor, (11) Cities: Skylines - Campus Radio, and (12) Cities: Skylines - Country Road Radio.*⁹¹ Dr. Chiou reports each of these DLC items as a “game” that is at least 5% cheaper on EGS.⁹² This makes no sense and is not economically meaningful. As she structures it, her analysis is incapable of answering the question she is addressing.

⁹¹ See: “12_Thresholds_Sockventure_DLC.R”.

⁹² See: “12_Thresholds_Sockventure_DLC.R”.

Dr. Chiou also includes many non-game items such as soundtracks. For example, Dr. Chiou also identifies the following soundtrack items as “games” that are at least 5% cheaper on EGS: (1) *Gamedec Digital Soundtrack*, (2) *Necromunda: Hired Gun - Original Soundtrack*, (3) *Patron Soundtrack*, (4) *UnMetal - Big Boom-Box Soundtrack*, (5) *SpellForce 3: Fallen God Soundtrack*, (6) *Elite Dangerous: Odyssey Official Soundtrack*, (7) *Expeditions: Viking - Soundtrack and Art Book*, (8) *The Textorcist – Soundtrack*, (9) *Realpolitiks II Soundtrack*, (10) *BIOMUTANT - Soundtrack*. Dr. Chiou does not explain how the pricing of such non-game items is useful in evaluating Valve’s PMFN, demonstrating the disconnect between her analysis and the impact of the PMFN Policy on platform competition.

4. Schwartz Proposed Market Definition is Correct

4.1. Overview

- (55) In Section 4 of my Opening Report, I define the relevant antitrust market in this case. In defining the relevant market, I focus on the fundamental question in a market definition analysis: what is the set of products which customers can and do readily turn to as reasonable substitutes for the product at issue in response to a change in the relative price of goods? I consider the alternative distribution methods available to developers and users in response to Valve's anticompetitive conduct and supracompetitive pricing. I first define the candidate market as the market for third-party digital PC game distribution via platforms. This term describes a platform that allows PC game publishers—specifically publishers other than the platform operator—to digitally distribute and sell games. I then evaluate whether any of the distribution methods at the borders of this candidate market are a feasible and reasonable alternative for developers *and* users. As noted in my Opening Report, “potential substitutable options for publishers and gamers must also allow for the facilitation of these transactions between PC game publishers *and* PC gamers.”⁹³ In my analysis, I assess a combination of factors and evidence in the context of this case for each potential substitute from both sides of the market.
- (56) Dr. Chiou and I agree that Steam is a two-sided platform, and the market definition analysis must consider *both* sides of the platform.⁹⁴ From the point of view of publishers, the product at issue is access to the platform to publish its games, and therefore, it is relevant to consider if publishers view a particular distribution method as substitutable with third-party digital PC game distribution. On the other side of the platform, users seek to acquire games (and various in-game features), and as such, it is relevant to consider how users may substitute between the various outlets that distribute games for user consumption and gameplay. Behavior on both sides of the market is relevant, but behavior on one side alone cannot determine whether a distribution method should be *included* in the relevant market.
- (57) I conclude that the relevant antitrust market for this case is the market for third-party digital PC game distribution, and the participants in that market are third-party digital PC game

⁹³ Schwartz Report, 2/8/2024, ¶ 64. (Emphasis added.)

⁹⁴ Schwartz Opening Report, 2/8/2024, ¶ 57.

Chiou Report, 5/17/2024, ¶ 30.

distribution platforms.⁹⁵ Other PC game alternatives (*e.g.*, distribution via first-party platforms, physical storefronts, or PC game subscriptions) and non-PC game distribution options (*e.g.*, distribution through consoles, mobile devices, or cloud gaming platforms) are not realistic alternatives on both sides of the market for the relevant market to be broader than third-party digital PC game distribution. See Section 4.1 of my Opening Report for a detailed discussion on the exclusion of each of these alternatives from the relevant market defined for this case.

- (58) Dr. Chiou claims that I “improperly exclude” first-party, console, and physical game sales from my proposed relevant market.⁹⁶ However, in deposition, Dr. Chiou asserts that she is not providing any affirmative opinion on the market definition in this case.⁹⁷ Dr. Chiou’s insists in her deposition that any affirmative opinion on market definition is “outside the scope of [her] assignment[.]”⁹⁸ For purposes of this report, I respond to her critiques. However, she explicitly rejects the idea that she is offering an alternative market definition or any market definition at all based on her analysis.⁹⁹
- (59) At deposition, Dr. Chiou testified that I use “unreliable” methodology or “flawed” reasoning to reach my conclusions regarding relevant market definition, specifically the exclusion of first-party platforms, consoles, and physical distribution from the relevant market and that this leads to an “unreliable” assessment of market power and market size.¹⁰⁰ Dr. Chiou testified that she used both consumer spending data and an industry participant estimate to demonstrate that I “disregard[] important substitutes that constitute large swaths of consumers spending.”¹⁰¹ Setting aside that Dr. Chiou claims to not put forth an affirmative market definition, Dr. Chiou asks the wrong question and arrives at a meaningless answer as a result. The fact that other methods of distribution or acquisition are large is neither necessary nor sufficient to define a relevant market. From that fact alone, a reasonable economist could not determine whether those alternatives are substitutes for the focal product, complements to the focal product, or neither. The question is whether a sufficient

⁹⁵ Schwartz Opening Report, 2/8/2024, § 4.1.2.

⁹⁶ Chiou Report, 4/17/2024, §§ 3.1.1–3.1.3.

⁹⁷ Lesley Chiou, Dep. Tr., 6/18/2024, at 46:23–48:14, 49:14–50:2, 53:17–54:1, 54:21–55:3.

⁹⁸ See, for example: Lesley Chiou, Dep. Tr., 6/18/2024, at 48:8–14.

⁹⁹ See, for example: Lesley Chiou, Dep. Tr., 6/18/2024, at 49:14–50:19.

¹⁰⁰ Lesley Chiou, Dep. Tr., 6/18/2024, at 46:23–47:13, 47:23–48:7, 50:20–51:5, 56:23–57:9.

¹⁰¹ Lesley Chiou, Dep. Tr., 6/18/2024, at 58:7–59:12, 62:4–16, 100:25–101:7, 101:21–102:22.

number of developers/users would switch to those options and away from third-party digital distribution to avoid a small, non-transitory price increase by a hypothetical monopolist. That is the thought experiment that flows from a SSNIP or HMT test, as described in my Opening Report, that allows an economist to determine if those other methods of distribution/acquisition are substitutes.¹⁰² This is the analysis I set forth in my Opening Report, as I will discuss herein. Below, I analyze and explain why Dr. Chiou’s critiques of my analysis are misguided and why the conclusions I outlined in my Opening Report are correct.

4.2. First-party platforms and distribution are not viable substitutes for third-party distribution

(60) As explained in Section 4.1.3 of my Opening Report, first-party distribution is not a viable substitute for third-party digital PC game distribution; instead, at best, this distribution channel is complementary.¹⁰³ Of course, Dr. Chiou does not ever conclude that first-party platforms and distribution *should be included* in the market definition.¹⁰⁴ When asked whether she is “offering an affirmative opinion that first-party platform sales are in the same antitrust market as which the Steam store operates[,]” she states that “[i]t’s outside of the scope of [her] assignment to define a relevant antitrust market.”¹⁰⁵ She merely offers meritless critiques of the analysis I presented in my Opening Report.

¹⁰² Schwartz Opening Report, 2/8/2024, at § 4.1.1.

¹⁰³ Schwartz Opening Report, 2/8/2024, at § 4.1.3.

See also:

Corrected Expert Report of Professor Joost Rietveld with Errata, 3/20/2024, ¶ 179. (“Furthermore, building and maintaining a self-distribution platform to become fully integrated requires significant scale and financial wherewithal that most mid-sized publishers likely do not possess, and small publishers definitely do not possess. However, attempts by entities with substantial financial wherewithal have demonstrated that self-distribution is not a viable alternative to PC game distribution through Steam. Ubisoft, EA, and Activision Blizzard (owner of Battle.net), three of the largest video game companies in the world, each attempted to shift away from Steam to distribute their PC games on their own distribution platforms but have all since returned and are currently multi-homing games to Steam.”)

PC World, “Watch Out, Steam? Discord Starts Selling PC Games, Unveils a Universal Game Launcher,” 8/9/2018, <https://www.pcworld.com/article/402408/discord-store-selling-pc-games.html>. (“Amazon, GOG, Humble, and Microsoft have tried to take on PC gaming’s 800-pound gorilla and all largely failed to shake up the status quo.”)

GameRant, “Bethesda Launcher Gets Official Shut Down Date,” 4/25/2022, <https://gamerant.com/bethesda-launcher-gets-official-shut-down-date/>. (“Bethesda is giving up on the idea of having its own launcher to compete with the likes of Steam and Epic Games. While those two can offer gamers hundreds if not thousands of titles to choose from, Bethesda’s own games cannot compete with such numbers, leading to the publisher announcing that it would shut down its launcher.”)

¹⁰⁴ Chiou Report, 5/17/2024, § 3.1.1.

Lesley Chiou, Dep. Tr., 6/18/2024, at 48:8–14, 49:14–50:2.

¹⁰⁵ Lesley Chiou, Dep. Tr., 6/18/2024, at 48:8–14.

(61) Dr. Chiou attempts, without valid evidence, to frame the departure and ultimate return of these developers to Steam as “demand substitution by publishers between first-party platforms and third-party platforms” and frames publishers’ movements as a direct result of the change in Steam’s revenue share tiers.¹⁰⁶ Instead, evidence outlined in my Opening Report suggests that the failure/lack of sufficient success of their own platform ultimately led to publishers returning to Steam,¹⁰⁷ invalidating Dr. Chiou’s assertion that Activision Blizzard, Ubisoft, and EA returned to Steam due to the 2018 revenue share change.¹⁰⁸ First, in 2018, Activision took *Call of Duty* off Steam and exclusively distributed the game through its first-party platform, Battle.net “in an effort to attract users to, and grow, Activision’s own platform.”¹⁰⁹ However, in 2022, after “Battle.net’s monthly active users (“MAUs”) remained

¹⁰⁶ Chiou Report, 5/17/2024, ¶¶ 89–90.

Dr. Chiou relies on a PC Gamer article to show first-party platform operators’ return to Steam. The article notes that Valve’s response to the increased competition from Epic’s entry was limited and that Valve dominates PC gaming: “When Epic CEO Tim Sweeney posed the Epic Games Store as a direct challenge to Steam’s 30% revenue cut, for example, Valve hardly budged. It did eventually lower its fee, but to 20% rather than Epic’s more generous 12% and only for the biggest publishers, which pissed off a lot of indie developers. . . . It feels premature to say that the era of the Steam rival is over, but I do think PC gaming has quietly (and sometimes loudly) endorsed a Steam monopoly.” See:

Chiou Report, 5/17/2024, ¶ 90, fn. 223.

Ars Technica, “They Really All Came Crawlin’ Back to Steam, Didn’t They?,” 12/15/2022, <https://www.pcgamer.com/they-really-all-came-crawlin-back-to-steam-didnt-they/>.

I acknowledged in my Opening Report that part of Steam’s claimed reasoning for the revenue share change was

See:

Schwartz Opening Report, 2/8/2024, ¶ 306.

Scott Lynch, Dep. Tr., 10/12/2023, at 102:7–18, 96:10–97:12. (“Q. Was one of the goals

A. Yes. Yeah. Q.

A. I don’t know. Possibly, yes. Q.

A. I think they did, yeah. Q. Who publishes that? A. If I remember, that was

Q. Also in late 2018, specifically November 26th, Steam is discussing a change to their revenue sharing; right? A. We had been discussing a change for a long time, but we were also discussing it in November. Q. What was the genesis of that change? Why was Steam thinking about it? A.

Q. Okay. Why? A.

. Q. Is one of those developers? A. was probably one of those developers that would be on my mind. Q. A. Yes. Q. A. Yes, I would guess. Q. Those are all large developers; right? A. They are, but it was many, many more than that. I mean, it was independent developers that, you know, had never shipped their game on Steam too.”)

New York Times, “Fortnite Maker Wants to Sell More Games, and Build a Platform to Do It,” 8/13/2020, <https://www.nytimes.com/2019/08/27/business/steam-epic-games-store.html>.

¹⁰⁷ Schwartz Opening Report, 2/8/2024, at §§ 4.1.3 and 6.2.

¹⁰⁸ Chiou Report, 5/17/2024, ¶ 90.

¹⁰⁹ *FTC v. Microsoft Corp. and Activision Blizzard, Inc.*, No. 3:23-cv-02880-JSC, Defendants’ Proposed Post-Trial Findings of Fact and Conclusions of Law, at Proposed Findings of Fact ¶ 216 (N.D. Cal. 2023).

Schwartz Opening Report, 2/8/2024, ¶ 82.

relatively flat during the period when it had exclusive access to digital sales of *Call of Duty* on PC, from 2018 through 2022[,]” Activision reversed course and re-released *Call of Duty* on Steam.¹¹⁰ Activision returned to Steam due to the lack of user engagement with its own platform.

- (62) Second, Ubisoft, another platform referenced by Dr. Chiou, left Steam in early 2019 *after* Valve had already implemented its tiered revenue share system.¹¹¹ When Ubisoft returned to Steam in 2022, it faced the *same* tiered commission rates that were in place when it originally left Steam.¹¹² This behavior is inconsistent with Dr. Chiou’s assertion that Ubisoft returned to Steam because of the revenue share change.¹¹³ When Ubisoft returned to Steam, it stated that they were “constantly evaluating how to bring our games to different audiences wherever they are,”¹¹⁴ suggesting that Ubisoft had a reliance on Steam’s user base for success and could not compete with their own platform.
- (63) Third, following the launch of its third-party platform Origin, EA began offering exclusive content on Origin and pulled some of its biggest titles from Steam.¹¹⁵ However, consumer adoption of Origin was minimal, forcing EA to ultimately return to distributing games on

¹¹⁰ *FTC v. Microsoft Corp. and Activision Blizzard, Inc.*, No. 3:23-cv-02880-JSC, Defendants’ Proposed Post-Trial Findings of Fact and Conclusions of Law, at Proposed Findings of Fact ¶ 216 (N.D. Cal. 2023).

Eurogamer, “Five Years Later, Call of Duty Returns to Steam with Modern Warfare 2,” 6/8/2022, <https://www.eurogamer.net/five-years-later-call-of-duty-returns-to-steam-with-modern-warfare-2>.

Schwartz Opening Report, 2/8/2024, ¶ 82.

¹¹¹ Schwartz Opening Report, 2/8/2024, ¶ 82.

Chiou Report, 5/17/2024, ¶ 90, fn. 220.

Valve changed its revenue share in late 2018. See: Schwartz Opening Report, 2/8/2024, ¶ 44.

¹¹² Schwartz Opening Report, 2/8/2024, ¶¶ 44, 82.

Chiou Report, 5/17/2024, ¶ 90.

¹¹³ Chiou Report, 5/17/2024, ¶ 90.

¹¹⁴ Ars Technica, “Ubisoft Comes Crawling Back to Steam After Years on Epic Games Store,” 11/22/2022, <https://arstechnica.com/gaming/2022/11/Ubisoft-comes-crawling-back-to-steam-after-years-on-epic-games-store/>.

¹¹⁵ CNET, “EA Launches Origin, Takes Aim at Steam,” 6/3/2011, <https://www.cnet.com/tech/gaming/ea-launches-origin-takes-aim-at-steam/>.

Games Industry.Biz, “EA Confirms More Platform Exclusives for Origin,” 6/15/2011, <https://www.gamesindustry.biz/ea-confirms-more-platform-exclusives-for-origin>.

Rock Paper Shotgun, “Content Wars: Origin/Steam Scuffle Unfolds,” 7/7/2011, <https://www.rockpapershotgun.com/origin-steam>.

Techspot, “Ubisoft and EA Pair Up, Offer Each Other’s Games Online,” 2/22/2013, <https://www.techspot.com/news/51731-ubisoft-and-ea-pair-up-offer-each-others-games-online.html>.

Steam.¹¹⁶ EA’s Senior Vice President commented on the return, stating that “we are game makers, and our aspiration is to connect as many people as we can to the great games that we built[,]” thus “we want to be [on Steam] where the players are.”¹¹⁷ Dr. Chiou ignores this evidence in her report.

- (64) In each of these three examples, Dr. Chiou fails to present any evidence that the impetus for publishers returning to Steam was a direct result of the revenue share change. At most, the evidence shows that publishers’ decision to *leave* Steam in the first place was because of their “unrealistic” commission rate.¹¹⁸
- (65) The few publishers able to develop a first-party platform (or a third-party platform where they sell their own first-party games), which by Dr. Chiou’s opinion, can participate in the “demand substitution between first- and third-party platforms[,]” still failed because of the *lack* of meaningful substitutability from both users and publishers.¹¹⁹ The evidence relating to Activision Blizzard and EA demonstrates that lack of user adoption was a significant driver behind publishers’ decisions to return to Steam. This contradicts Dr. Chiou’s claim about publishers returning to Steam. It also illustrates that the behavioral evidence is that users do not view first-party platforms (or a publisher exclusively offering its content on its own platform) as a sufficiently viable alternative to a third-party platform. Dr. Chiou’s critique does not offer any reasonable economic basis for me to alter my opinion that first-party distribution should be excluded from the relevant antitrust market.

¹¹⁶ CNET, “EA Returns to Steam with Star Wars Jedi: Fallen Order in November,” 10/29/2019, <https://www.cnet.com/tech/gaming/ea-returns-to-steam-with-star-wars-jedi-fallen-order-in-november/>.

Kotaku, “EA Returns to Steam with Star Wars Jedi: Fallen Order, 10/29/2019, <https://kotaku.com/ea-returns-to-steam-with-star-wars-jedi-fallen-order-1839440326>.

Digital Trends, “EA Origin Has Been Replaced with a New, Faster PC App,” 10/7/2022, <https://www.digitaltrends.com/gaming/ea-origin-replaced-app/>. (“Origin was EA’s exclusive PC launcher for its titles first launched in 2011. It was intended to compete with other digital PC storefronts such as Steam, though it eventually integrated with its competitor to sell their titles on that service. Origin, however, was still required to run EA titles even if bought on Steam. Despite accumulating over 50 million registered users, the service was heavily criticized and maligned by the PC community due to security flaws and suspicions of spying on players.”)

For comparison, Steam had approximately 1 billion registered Steam accounts by 2020. See:

Valve, “Joint Business Review,” 10/2020 (VALVE_ANT_0052792–2829, at VALVE_ANT_0052816).

¹¹⁷ The Verge, “EA Games Are Returning to Steam Along with the EA Access Subscription Service,” 10/29/2019, <https://www.theverge.com/2019/10/29/20937055/ea-games-steam-access-subscription-service-pc-storefront-jedi-fallen-order-sales>.

¹¹⁸ Chiou Report, 5/17/2024, ¶¶ 89–92.

Schwartz Opening Report, 2/8/2024, ¶ 213.

¹¹⁹ Chiou Report, 5/17/2024, ¶ 92.

- (66) Publishers may also consider self-publishing through a website rather than building an entirely new platform or a first-party storefront, which Dr. Chiou claims is “an important distribution alternative for the publisher and an important purchase alternative for consumers.”¹²⁰ I disagree. While this option may be more accessible and less costly for publishers, this is still not a reasonable substitute for both publishers and users. Publishers distributing via this method and switching away from third-party distribution lose access to the larger user base offered by a third-party platform.¹²¹ Users lose the ability to reach multiple publishers and a wider variety of games, store their games in one library, and interact with their friends, features that users value in a third-party digital PC platform.¹²² These fundamentally different characteristics make it unreasonable and unlikely that either a publisher or consumer would switch from third-party digital platforms to this type of self-distribution.
- (67) Dr. Chiou reiterated in her report that “an appropriate analysis of market definition must account for demand substitution on both sides of the platform.”¹²³ As such, beyond the publisher substitutability arguments I discuss above, Dr. Chiou further claims that excluding first-party distribution “leads to inconsistencies that do not make logical or economic sense, since video game users exhibit demand substitution between first-party and third-party

¹²⁰ Chiou Report, 5/17/2024, ¶ 107.

¹²¹ Game Gunk Website, Do You Need a Website to Host Your Own Game?, <https://game-gunk.com/do-you-need-a-website-to-host-your-own-game/> (accessed 2/4/2024). (“If you are hoping to obtain as many sales as possible or create a commercial venture with your indie game, you’re better off putting your game on exchanges such as Steam, GOG, or Itch.io in order to get the most amount of players to see and play and your game. . . . [I]t is not mandatory or advisable just to have your game hosted on your own website. Unless you have lofty expectations to create your own platform such as Steam or GOG.”; “But for most, do not expect your website to encourage thousands of downloads or sales. Especially if you are an independent creator.”; “Leave it solely to your [own] website to market and distribute your game – [you] may end in a low amount of downloads. Especially if you are a start-up with a new game and a small website. People do not like to download games from an unknown source[.]”)

PC Gamer, “Is it Worth Cutting Out Steam to Sell Indie Games Direct?,” 3/7/2018, <https://www.pcgamer.com/is-it-worth-cutting-out-steam-to-sell-indie-games-direct/>. (“Selling from a custom website means a developer has to build all the infrastructure around the game from the ground up: Rohrer runs multiple servers, sets up automatic game updates and created a user review system himself.”; “However, for some developers the extra audience that Steam can offer (18 million concurrent users and counting) has become a necessity in order to survive. Hecker says that he’s simply not making enough money selling SpyParty directly. . . . ‘It’s very hard to not go on Steam and make a commercially viable game.’”; “Currently, without much fanfare, the game is selling anywhere between two and 20 copies a day through the website.”; “Another developer that, like Hecker, is keen on the direct sales model but isn’t ready to rely on it is Adam Saltsman. . . . ‘we talked to a bunch of studios that did their own direct sales setup, but it was pretty intimidating.’”)

Game Developer, “6 Alternatives to Steam for Indie Developers,” 4/24/2017, <https://www.gamedeveloper.com/business/6-alternatives-to-steam-for-indie-developers>. (“[Y]ou could sell your game on your own website, although unless you have a very big and engaged community, we recommend you not to rely solely on this.”)

¹²² [REDACTED] “Steam User and [REDACTED] User Profile Survey July 2019,” 7/2019 [REDACTED]

¹²³ Chiou Report, 5/17/2024, ¶ 85.

platforms.”¹²⁴ In doing so, Dr. Chiou then claims that my market definition “makes no economic sense” and provides several examples purported to support this claim.¹²⁵ In providing said examples, Dr. Chiou repeatedly uses the phrase “from a consumer’s point of view.”¹²⁶ In the context of these specific examples, Dr. Chiou does not consider publisher substitution. More broadly, while Dr. Chiou does present arguments regarding demand substitution on both sides of the market, these arguments are siloed from each other. Dr. Chiou does not consider publisher and user substitutability holistically. As such, the examples Dr. Chiou presents in an effort to label my market definition as counter to economic reason are misleading. These examples do not provide evidence of substitution between first- and third-party platforms simultaneously occurring on both sides of the platform.

- (68) In Section 4.1.3 of my Opening Report, I noted the absence of any evidence that Valve views first-party platforms as meaningful competitive threats. In fact, Valve’s collaborative relationships and partnerships with first-party platforms demonstrate that Valve does not regard first-party platforms as competitors. For example, Valve’s email correspondence with ██████ and ██████ reflects Valve’s attempts to collaborate with such first-party platforms, indicating that they are not a competitive threat.¹²⁷
- (69) Dr. Chiou claims that my market definition “is inconsistent with industry realities and how industry participants and research firms describe the industry.”¹²⁸ She continues, stating that neither industry participants nor market research firms “recognize first-party gaming as a separate market or submarket, and therefore do not delineate between first- and third-party revenue in their reported data.”¹²⁹ However, produced documents and data from *actual industry participants* (e.g., publishers and platform owners) demonstrate that publishers distinguish first-party platforms and sales from third-party, consistent with my market definition. For example, a document produced by ██████ illustrates that the third-party

¹²⁴ Chiou Report, 5/17/2024, ¶ 96.

¹²⁵ Chiou Report, 5/17/2024, ¶¶ 96–101.

¹²⁶ Chiou Report, 5/17/2024, ¶¶ 99–100.

¹²⁷ Schwartz Opening Report, 2/8/2024, ¶ 85.

See, for example:

Valve ██████ Presentation, 4/16/2021 (VALVE_ANT_1817158–190, at VALVE_ANT_1817158–170, VALVE_ANT_1817187). (“Put your next big release on Steam so that you can capitalize on the massive reach and growth of our platform without giving up your close relationship with your customers.”)

¹²⁸ Chiou Report, 5/17/2024, ¶¶ 102–103.

¹²⁹ Chiou Report, 5/17/2024, ¶ 139.

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platforms including Steam, Greenman, Uplay, Epic Games Store (“EGS”), Humble, GOG, and Gamersgate make up the vast majority of [REDACTED] addressable market.¹³⁰ In addition, data produced by [REDACTED] and [REDACTED] record revenue for first- and third-party sales separately, suggesting that these publishers view these distribution methods as distinct from one another.¹³¹ Other produced documents and outside industry reports distinguish third-party sales from first-party sales.¹³² In my opinion, Dr. Chiou has misread the evidence, or ignored it.

- (70) The evidence above supports that publishers do not view first-party platforms as substitutes. For users, first-party platforms are similarly not substitutable. First-party platforms lack the indirect network effects that are inherent in a two-sided platform.¹³³ As I note in my Opening Report, such a platform is operated by a single publisher and does not admit third-party publishers.¹³⁴ As such, while the number of users on one side of the platform can increase, there can be no such increase on the other side of the platform, *i.e.*, the publisher group. This lack of publishers and the resulting lack of games on a first-party platform compared to third-party platforms supports the notion that users would not readily substitute to a first-party platform as a result of a small but significant non-transitory price increase on Steam.

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- ¹³⁰ [REDACTED] “Presentation to the Board of Directors,” [REDACTED]
- ¹³¹ [REDACTED]
- [REDACTED]
- See also: Schwartz Opening Report, 2/8/2024, Attachments E-2, X-4, X-5.
- ¹³² See, for example: [REDACTED], c. 2019 [REDACTED]
- Valve, Emails Regarding Background and Advice, 8/16/2018–8/20/2018 (VALVE_ANT_0606204–08, at VALVE_ANT_0606204).
- Hill-Whittall, Richard (2015), *The Indie Game Developer Handbook*, Burlington, MA: Taylor & Francis Group, at 111–125.
- ¹³³ Dr. Chiou and I agree on the definition of indirect network effects (sometimes referred to as cross-side network effects). See:
- Chiou Report, 5/17/2024, ¶ 210.
- However, when asked how a first-party platform has indirect network effects, Dr. Chiou responded that “[t]he indirect network effects comes from the availability of titles on the platform. And so the more titles that, for example, a publisher has, the more valuable it becomes for consumers.” See:
- Lesley Chiou, Dep. Tr., 6/18/2024, at 77:11–19, 79:5–12.
- Dr. Chiou contradicts herself and has an incorrect understanding of indirect network effects as it relates to first-party platforms.
- ¹³⁴ Schwartz Opening Report, 2/8/2024, ¶ 67.

4.3. Console games are not a viable substitute for PC games

- (71) Dr. Chiou criticizes my exclusion of console games from the relevant market.¹³⁵ However, she is “not offering an affirmative opinion on whether or not [consoles and PCs are] in the same antitrust market.”¹³⁶ As I discussed in Section 4.1.3 of my Opening Report, evidence overwhelmingly demonstrates that distribution services for PCs and consoles (including handheld consoles), are not substitutes for third-party digital distribution platforms; at most, they are complements.¹³⁷
- (72) Dr. Chiou claims that the evidence supports that “Valve reciprocally views console platforms as an important source of competition to Steam.”¹³⁸ For example, Dr. Chiou cites to testimony from Gabe Newell stating that “customers have enormous choice in how they -- where they purchase their products, whether they buy the game on an Xbox, whether they buy it on Steam, whether they buy it on Epic Games Store or whether they buy it directly from software developers[.]”¹³⁹ Dr. Chiou additionally points to testimony from Mr. Lynch stating that Valve “had conversations with third-party software developers about what would allow us to be a

¹³⁵ Chiou Report, 5/17/2024, § 3.1.2.

¹³⁶ Lesley Chiou, Dep. Tr., 6/18/2024, at 46:23–47:13.

¹³⁷ See, for example:

Jason Owens, Dep. Tr., 12/5/2023, at 212:3–22. (“Q. What about investing in a porting opportunity? Q. What is that -- what do you take that to mean? A. I would take that to mean somebody would, for a share of the profits, help us port the game to different formats. Q. Along the lines we were discussing before, to PlayStation VR? A. Yes. Q. And the other non-VR consoles? A. If somebody would help fund development, we would share in the profits if they could help get us onto, you know, other modes, other means, you know. Q. And you needed money for that? A. Yes, it would require basically recreating and almost making a new game.”)

Limpach, Odile (2020), *The Publishing Challenge for Independent Video Game Developers[.] A Practical Guide*, Boca Raton, FL: Taylor & Francis Group, at 22, 72. (“Each console manufacturer has its own store and audience, with limited crossover. As developers, it is definitely more challenging to release on a console than to release on PC. With manufacturers being heavily involved in regulating content on these consoles, data availability is also limited.”; “The online console stores have always had strict approval processes for content. Microsoft and Sony were the first ones to open their stores to indie developers and grow their catalog of independent titles. With this generation of consoles, Nintendo has also recognized the advantage of working with independent developers to enrich and diversify their offer and, thus, expand their target group.”)

John Robb, Dep. Tr., 11/28/2023, at 108:4–19. (“Q. Did Dark Catt have plans to bring out versions of Djinni & Thaco that could be played on the PC platform? A. That was 100 percent the plan. Q. What about bringing out versions for other hardware platforms, such as -- and I'll just name some. Nintendo, Sony PlayStation, you know, Xbox. A. . . That is fundamentally a different market. Q. How so? A. Because of the -- there's three different components: The technology behind it; the consumers and the demographics, who utilize that; as well as the development that goes into it.”)

[REDACTED], 12/2018 [REDACTED] (“Consoles are a different market [from the PC market], with dedicated game machines whose hardware costs are often partly subsidized by software revenue.”)

¹³⁸ Chiou Report, 5/17/2024, ¶ 118.

¹³⁹ Chiou Report, 5/17/2024, ¶ 118, fn. 272.

competitive platform given the wide range of distribution options they had, selling it themselves, selling it through retailers, selling it through other digital distribution services or selling it through other providers like the Xbox, Nintendo Switch or Sony PlayStation.”¹⁴⁰ However, the mere existence of alternative gaming options does not mean they are substitutes for purposes of relevant market definition.

- (73) Dr. Chiou also argues that there is “substantial overlap in titles playable on PCs and consoles,”¹⁴¹ and confirms in her deposition that publishers offering both a console version and PC version of their game is “consistent with substitution in which publishers can choose different alternatives to distribute their games.”¹⁴² The fact that publishers choose to distribute their games on both PCs and consoles suggests that distribution services for PCs and consoles are, if anything, complements. I reached this conclusion in my Opening Report.¹⁴³
- (74) Dr. Chiou misses that the existence of different distribution channels and the fact that some publishers and consumers use them are not sufficient for these channels to be considered economic substitutes. Even if users and developers multihome, that is not sufficient for those distribution channels to be economic substitutes in the same relevant market. The key economic question is whether users and developers can feasibly and readily substitute between these alternatives in response to a change in price on third-party platforms. Dr. Chiou does not answer—indeed, ignores—this question. Instead, she makes a profound economic error because she conflates the idea of video games being sold in different channels of distribution as evidence of substitutability between those alternatives. She does not apply economic principles to evaluate the relevant market that I defined in my Opening Report or the issue generally. She merely makes the obvious point that there are a variety of ways in which consumers could acquire any video game. Her argument is akin to claiming airplanes and bicycles are economic substitutes because they both allow the user to get from Point A to Point B. She lacks an economic basis to define a relevant antitrust market or to critique a definition of one.

¹⁴⁰ Chiou Report, 5/17/2024, ¶ 118, fn. 272.

¹⁴¹ Chiou Report, 5/17/2024, ¶ 112.

¹⁴² Lesley Chiou, Dep. Tr., 6/18/2024, at 41:6–42:9.

¹⁴³ Schwartz Opening Report, 2/8/2024, ¶ 98.

- (75) I do consider the correct question. In Section 4.1.3 of my Opening Report, I review testimony and Valve’s internal documents that show that Valve does not view consoles as reasonable economic substitutes for platforms like Steam.¹⁴⁴
- (76) In addition, Dr. Chiou claims in her Opening Report that Valve’s development of the Steam Deck and evidence of users playing games on both the Steam Deck and PCs is consistent with PC gaming platforms and consoles operating as substitutes.¹⁴⁵ At best, this is a necessary condition for the products to be in the same market, but Dr. Chiou offers no evidence—and I am not aware of any—to suggest that consumers substitute away from third-party platforms and to the Steam Deck or other consoles in response to changes in the terms and conditions of sale, including price increases. That is what Dr. Chiou would need to show to support her argument, and she fails to do so. Thus, her critique fails.

4.4. Physical distribution is not a viable substitute for digital distribution

- (77) Physical distribution through brick-and-mortar outlets is not a reasonable economic substitute for digital third-party PC game distribution services. There are significant differences between digital and physical distribution for both users and developers that make them inadequate economic substitutes for antitrust purposes.¹⁴⁶ Again, despite her critiques, when asked if she has “concluded that retail sales channels should be included in the relevant market[,]” Dr. Chiou testified that she “was not asked to evaluate or define the relevant antitrust market.”¹⁴⁷ Thus, she offers no opinion that physical distribution should be included in the relevant market definition.

¹⁴⁴ Schwartz Opening Report, 2/8/2024, ¶ 105.

See, for example:

Valve, Emails Regarding Promotions, 2/2/2017–2/22/2017 (VALVE_ANT_1163340–43, at VALVE_ANT_1163340), available at Ricky Uy, Dep. Tr., 10/24/2023, Exhibit 173. (A Valve employee told a developer that PC and console versions of a game “aren’t competitive products – they are for entirely different platforms, so no cannibalization as they are not selling PC games and we are not selling PS4 games.”)

Valve, Emails Regarding ██████ Meeting, 9/12/2013–9/13/2013 (VALVE_ANT_0164882–84, at VALVE_ANT_0164883). (“[Valve has] spent a ton of time and energy over the past two years trying to convince ██████ that shipping day and date on the PC won’t cannibalize their console sales.”)

¹⁴⁵ Chiou Report, 5/17/2024, ¶¶ 119–124.

¹⁴⁶ Schwartz Opening Report, 2/8/2024, § 4.1.3.

¹⁴⁷ Lesley Chiou, Dep. Tr., 6/18/2024, at 54:21–55:14. (“Q. You, based on all the evidence that you’ve reviewed in connection with this case, have not concluded that retail sales channels should be included in the relevant antitrust market; correct? A. As I said before, I was not asked to evaluate or define the relevant antitrust market. My assignment is to look at Dr.

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- (78) As discussed in my Opening Report, digital distribution is fundamentally different from physical distribution from both a user and developer perspective.¹⁴⁸ Although the shift from physical distribution towards digital distribution is consistent with my conclusion that these distribution methods are not substitutable, I do not claim that the decline of physical PC game sales alone is the basis for excluding physical distribution from the relevant market, as Dr. Chiou suggests.¹⁴⁹
- (79) Dr. Chiou further cites four studies from 2000 through 2010 that examine the relationship between online and offline purchases in the context of sales taxes and concludes from these studies that “when offline goods become relatively more expensive (*e.g.*, due to changes in tax laws), consumers switch to buying retail goods online instead.”¹⁵⁰ None of the studies specifically examine the video game market.¹⁵¹ These reports are dated, and the results likely

Schwartz’s methodology. Q. So you do not provide an opinion that, in fact, looking at this additional evidence you have claimed to provide in your report leads to the conclusion that retail sales channels should be in the relevant antitrust market; correct? A. My opinion is that Dr. Schwartz’s conclusion is unreliable, based upon his methodology. I was not asked to define the relevant antitrust market, but rather, look at his methodology.”)

¹⁴⁸ Schwartz Opening Report, 2/8/2024, § 4.1.3.

See, for example:

Valve, Emails Regarding Retail and Steam Mark-Ups, 10/24/2003 (VALVE_ANT_0051858). (“Our margin on a retail box is about [REDACTED]. This compares to the Steam version at [REDACTED]. Steam derives profit not only from the efficiencies of online distribution over retail distribution, but also by extracting both the publisher and retailer profit margins from the transaction.”)

Scott Lynch, Dep. Tr., 10/12/2023, at 35:18–37:1.

Valve, “What’s Going on in the (Game) World According to Steam?,” c. 2018 (VALVE_ANT_0058980.pptx, at Slide 13). (Showing that Steam had approximately [REDACTED] unique products in its “main capsule” in 2018 and that main capsule “generate[d] [REDACTED] every day[.]” compared to the “[r]etail days [where] game success was gated by shelf space[.]”)

See Schwartz Opening Report, 2/8/2024, § 4.1.3 for further discussion.

¹⁴⁹ Chiou Report, 5/17/2024, ¶ 130.

Lesley Chiou, Dep. Tr., 6/18/2024, at 51:6–13.

Schwartz Opening Report, 2/8/2024, § 4.1.3.

¹⁵⁰ Chiou Report, 5/17/2024, ¶ 133.

¹⁵¹ Chiou Report, 5/17/2024, ¶ 133.

Chiou, Lesley and Erich Muehlegger (2008), “Crossing the Line: Direct Estimation of Cross-Border Cigarette Sales and the Effect on Tax Revenues,” *B.E. Journal of Economic Analysis and Policy* 8(1): 1–39.

Goolsbee, Austan (2000), “In a World Without Borders: The Impact of Taxes on Internet Commerce,” *Quarterly Journal of Economics* 115(2): 561–576.

Goolsbee, Austan, Michael F. Lovenheim, and Joel Slemrod (2010), “Playing with Fire: Cigarettes, Taxes and Competition from the Internet,” *American Economic Journal: Economic Policy* 2(1): 131–154.

Ellison, Glenn and Sara Fisher Ellison (2009), “Tax Sensitivity and Home State Preferences in Internet Purchasing,” *American Economic Journal: Economic Policy*, 1(2): 53–71.

do not reflect the same cross-price elasticities of demand that we would observe today. Additionally, the referenced studies refer to online sales in vague terms; there is no reference to platforms.¹⁵² As such, these results are not relevant to defining the market in this case and cannot provide a basis for substitutability between third-party physical and digital PC game distribution.

- (80) Further, Dr. Chiou ignores the time dimension of the relevant market analysis. Digital markets are evolving quickly. This introduces dynamic elements to the market definition analysis that Dr. Chiou ignores. When markets evolve and a participant is no longer competitively meaningful, the relevant market analysis and definition must reflect this evolution. If one doesn't consider the time element, markets could *only grow* in size and new markets would never form. Dr. Chiou ignores this in her analysis. Thus, her analysis is flawed and misleading.

4.5. Dr. Chiou's market size analysis is overinclusive and unreliable

4.5.1. Dr. Chiou relies on inappropriate data for her market size analysis and market share critiques

- (81) Despite testifying that she is not offering any affirmative opinion about the boundaries of a relevant market, Dr. Chiou claims to calculate a market size and criticizes my calculation of

¹⁵² Chiou Report, 5/17/2024, ¶ 133.

Chiou, Lesley and Erich Muehlegger (2008), "Crossing the Line: Direct Estimation of Cross-Border Cigarette Sales and the Effect on Tax Revenues," *B.E. Journal of Economic Analysis and Policy* 8(1): 1–39, at 2. ("We are able to separately identify the effect of price and income on an individual's propensity to cross the border from their effects on an individual's quantity of consumption. In our discrete choice model, each individual chooses among several alternatives; they can purchase cigarettes within their home state, online, or at any neighboring state.")

Goolsbee, Austan (2000), "In a World Without Borders: The Impact of Taxes on Internet Commerce," *Quarterly Journal of Economics* 115(2): 561–576, at 561. ("This paper uses new data on the purchase decisions of approximately 25,000 online users to examine the effect of local sales taxes on Internet commerce. The results suggest that, controlling for observable characteristics, people living in high sales taxes locations are significantly more likely to buy online.")

Goolsbee, Austan, Michael F. Lovenheim, and Joel Slemrod (2010), "Playing with Fire: Cigarettes, Taxes and Competition from the Internet," *American Economic Journal: Economic Policy* 2(1): 131–154, at 132. ("In this paper, we make use of survey data on Internet use by state and across time, as well as state data on taxable cigarette sales, to investigate how the growth of the Internet has affected the tax rate elasticity of taxable cigarette sales. The results suggest the rise of online shopping has dramatically increased the sensitivity of in-state taxed purchases to state tax rates.")

Ellison, Glenn and Sara Fisher Ellison (2009), "Tax Sensitivity and Home State Preferences in Internet Purchasing," *American Economic Journal: Economic Policy*, 1(2): 53–71, at 53–54. ("In this paper, we investigate aspects of consumer behavior that will have a substantial impact on the future of Internet and traditional retail. We focus on two main issues. First, we examine the extent to which the success of e-retail is due to the *de facto* tax-free status of most e-retail purchases in the United States. This bears on the relative efficiency of e-retail, and is important to understanding what may happen if states are able to tax online sales.")

market shares, claiming Valve's share is overstated.¹⁵³ However, Dr. Chiou cannot calculate the size of a relevant market when she has not defined the bounds of the relevant antitrust market to be measured. As such, Dr. Chiou's calculation of market share is inappropriate and her critique that I overstate Valve's share of the relevant market as I have defined it is misguided.

- (82) Dr. Chiou relies on publicly available data from Newzoo to estimate the size of her undefined market.¹⁵⁴ These data do not, and indeed, are not intended to, reflect any relevant antitrust market, and certainly not a relevant antitrust market that considers the context, relevant facts, and confidential information of this case. These data do not consider the sufficiency of substitutability on either side of a platform to determine what to include or exclude; instead, these data represent a compilation of sales across a variety of distribution channels.
- (83) Further, the Newzoo data is overinclusive of the relevant market as I have defined. The Newzoo data include [REDACTED], which should not be included in any market size or share calculations for the relevant market in this case.¹⁵⁵ Dr. Chiou also notes that the Newzoo data includes [REDACTED]¹⁵⁶ This is inappropriate, as those are not included in the relevant antitrust market.¹⁵⁷ Dr. Chiou offers no critique of my analysis that excludes these distribution channels from the relevant market or offer any affirmative opinion about the breadth of the relevant market. Newzoo's inclusion of [REDACTED] in its data and Dr. Chiou's reliance on that data are disconnected from the relevant market analysis, and her estimates of market sizes are misleading and unreliable for purposes of this case.¹⁵⁸

¹⁵³ Lesley Chiou, Dep. Tr., 6/18/2024, at 46:23–48:14, 49:14–50:2, 53:17–54:1, 54:21–55:3.

Chiou Report, 5/17/2024, at § 3.2.

¹⁵⁴ Chiou Report, 5/17/2024, at ¶ 138.

¹⁵⁵ Chiou Report, 5/17/2024, at ¶ 139.

Schwartz Opening Report, 2/8/2024, § 4.1.3.

¹⁵⁶ See Chiou Report, 5/17/2024, at Exhibit 4.

¹⁵⁷ Schwartz Opening Report, 2/8/2024, § 4.1.3.

I note that Dr. Chiou states that "If I exclude revenues from [REDACTED] or [REDACTED], my results do not change materially. See Workpaper 15." See:

Chiou Report, 5/17/2024, at fn. 304.

¹⁵⁸ The Newzoo data are [REDACTED], so one cannot filter out these irrelevant sales. As such, for purposes of market size or share, estimates for the relevant market based on the Newzoo data are necessarily incorrect. See:

Chiou Report, 5/17/2024, at Exhibit 1, tab 'data_tot_mkt.'

4.5.2. Dr. Chiou ignores evidence produced in this case that supports that Steam has a high market share and includes evidence that is irrelevant

- (84) Dr. Chiou criticizes my use of internal documents and financials produced in this case to calculate market size and market share for Valve, arguing that I use “a variety of different, and potentially noncomparable or unreliable, data sources to estimate [my] proposed market shares.”¹⁵⁹ However, using these data is specific to the facts of the case. These data reflect actual sales and/or internal company estimates of sales used in the ordinary course of business to make key business decisions. My market size and share calculation represents the relevant antitrust market in this case, unlike Dr. Chiou’s calculation, and is based on the most readily identifiable and most granular data made available for the purposes of this litigation.
- (85) To be meaningful, third-party data used in a market size/share analysis need to comport with the internal, ordinary-course-of-business data and documents that describe the relative positioning of the competitors in the market. Dr. Chiou’s market share estimates do not meet that basic standard. Produced documents illustrate (and thus support my calculation of) Valve’s high and sustained market share in the relevant market.¹⁶⁰
- (86) Dr. Chiou also presents documents with market share estimates for an incorrect relevant market and thus should be ignored.¹⁶¹ Her chosen sources are irrelevant, flawed comparisons to the market shares I present in my Opening Report for the relevant market. For example, Dr. Chiou cites a 2022 report that Microsoft provided to the government of Brazil in connection

¹⁵⁹ Chiou Report, 5/17/2024, at ¶ 147.

¹⁶⁰ Schwartz Opening Report, 2/8/2024, § 4.2.3.

In her report, Dr. Chiou only addresses the [REDACTED] presentation estimates, claiming that it is “unreliable” solely because “its revenue estimates contradict the revenues reported in the [REDACTED].” See:

Chiou Report, 5/17/2024, ¶ 147.

Lesley_Chiou, Dep. Tr., 6/18/2024, at 59:13–22.

See:

Chiou Report, 5/17/2024, fn. 315.

Schwartz Opening Report, 2/8/2024, Attachment E-6.

[REDACTED] Presentation to the Board of Directors,” [REDACTED]

CD Projekt, Consolidated Financial Statement, 2019, at 26, 31.

¹⁶¹ Chiou Report, 5/17/2024, ¶ 141.

with the merger review relating to Microsoft’s acquisition of Activision Blizzard.¹⁶² The Microsoft report claims that Valve has a 10–20% market share across global PC and console digital distribution platforms and a 20–30% market share in global digital distribution of PC games.¹⁶³ This Microsoft report is assessing share in a different market, one that does not reflect the relevant antitrust market in this case and is inconsistent with produced evidence in this matter.

4.6. Dr. Chiou improperly claims that regional platforms are incorrectly excluded from the relevant market

- (87) Dr. Chiou claims that I “improperly exclude[d] some third-party platforms, such as Tencent, which operates the third-party platform WeGame.”¹⁶⁴ Since Dr. Chiou does not actually define a market, her criticism rings hollow.¹⁶⁵ That said, her argument that it is improper to exclude WeGame from the relevant market is misguided. Such regional platforms are not a sufficient substitute for users or developers.
- (88) Developers value access to the large and diverse user base provided by a global third-party platform like Steam, and thus would not consider distribution on WeGame to be a viable substitute to a platform such as Steam because it would be unable to reach a worldwide audience.¹⁶⁶ Valve and other global third-party platform operators offer a large, global user

¹⁶² Chiou Report, 5/17/2024, ¶ 141.

¹⁶³ Chiou Report, 5/17/2024, ¶ 141.

Conselho Administrativo De Defesa Econômica, Email from Matheus Nasaret with the Tauil Chequer Report (Document 1079485), c. 2022, at PDF 13–15, available at: https://sei.cade.gov.br/sei/modulos/pesquisa/md_pesq_processo_exibir.php?1MQnTNkPQ_sX_bghfgNtnzTLgP9Ehbk5UOJvmzyesnbE-Rf6Pd6hBcedDS_xdwMQMK6_PgwPd2GFLjH0OLyFX6gl2sGKAL6BCs1NvfGDcTA25PStaVelgicwm5iRue6. (See Table 8 and Table 9.)

¹⁶⁴ Chiou Report, 5/17/2024, ¶ 145.

¹⁶⁵ Lesley Chiou, Dep. Tr., 6/18/2024, at 47:23–48:14, 49:14–50:2, 53:17–54:1, 54:21–55:3.

¹⁶⁶ I understand that Tencent launched WeGame X, an international version of WeGame, in 2019. The WeGame X homepage (<https://www.wegamex.com.hk/>) does not currently load, and the latest archived version of the webpage is from April 2021. I have not seen any public information regarding if, and to what extent, WeGame X is still operational. See:

Game World Observer, “WeGame X Is Out Globally: Tencent Launches the International Version of its Chinese Storefront,” 8/4/2019, <https://gameworldobserver.com/2019/04/08/tencent-launches-wegame-x-globally>.

South China Morning Post, “Tencent Quietly Launches Its WeGame Store Outside China,” 4/3/2019, www.scmp.com/abacus/tech/article/3029259/tencent-quietly-launches-its-wegame-store-outside-china.

Internet Archive, WeGame X Home Page, https://web.archive.org/web/20210401000000*/https://www.wegamex.com.hk/ (accessed 6/10/2024).

base and its benefits to developers.¹⁶⁷ For example, an Epic webpage includes EGS’s “global audience of over 230M+ users” as a reason to distribute on EGS.¹⁶⁸ As another example, in a list of points to highlight to indie developers, a Valve employee includes the importance of Steam’s diverse user base: “[T]he ever increasing global reach of Steam means you might find an audience you’d never thought of specifically catering to[.]”¹⁶⁹ The size and reach of a user base is an important consideration for developers making distribution choices and suggests that developers would not consider distribution on a global platform and WeGame to be substitutable. Similarly, global users would not see WeGame as a substitute for a global platform, since WeGame offers a more limited game library, limited languages, and limited payment methods that may prevent global users from accessing and utilizing the platform in the same manner as a global platform.¹⁷⁰ As such, WeGame (and any other region-specific platforms) are correctly excluded from my relevant market.

Further, it appears that WeGame X was intended to bring games developed by Chinese developers to international users, making it an unfeasible distribution option for a non-Chinese developer. See:

South China Morning Post, “Tencent Quietly Launches Its WeGame Store Outside China,” 4/3/2019, www.scmp.com/abacus/tech/article/3029259/tencent-quietly-launches-its-wegame-store-outside-china. (“All 17 games on WeGame X are from Chinese companies, with indie games accounting for more than half. The rest of the collection comprises of titles developed by Tencent’s own Next Studios and two wuxia RPGs that come with no English translation. . . . WeGame X is a product WeGame is testing to serve its global users,” a Tencent representative told Abacus. “We hope with the maturation of this product, we can bring more Chinese games overseas to cater to multiple gamer demographics.”)

¹⁶⁷ For additional examples, see:

Steamworks Website, Home Page, <https://partner.steamgames.com/> (accessed 10/26/2023). (“Reach a Global Audience[:] With over 132 million monthly active users across 249 countries, Steam gives you access to a worldwide community of players—and it’s growing all the time.”)

Valve, “GDC 2020 – Competitor Analysis,” c. 2020, (VALVE_ANT_0019400–02, at VALVE_ANT_0019401), available at Scott Lynch, Dep. Tr., 10/13/2023, Exhibit 156. (“Success can happen for anyone on Steam, from Triple-A to the tiniest Indie[.] The global reach of Steam is huge and still growing, for all tastes[.] Developers from everywhere and anywhere [distribute games on Steam.]”)

¹⁶⁸ Epic Games Website, Epic Games Store Offers App, Software and Game Distribution, <https://store.epicgames.com/en-US/distribution> (accessed 10/30/2023). (“Reach a Global Audience[:] Direct distribution to over 230 million Epic users across 187 countries with 16 languages supported.”; “Why should I distribute my game on the Epic Games Store? The Epic Games Store has a global audience of over 230M+ users[.]”)

¹⁶⁹ Valve, Emails Regarding Concepts for Indie Talks, 2/25/2020–3/10/2020 (VALVE_ANT_0813962–65, at VALVE_ANT_0813964).

¹⁷⁰ Niko Partners, “Tencent Games Strategy 2019,” 2019, at 10, available at: <https://nikopartners.com/wp-content/uploads/2019/06/Tencent-Games-Strategy-2019.pdf>. (“The platform has more than 200 titles to choose from, but this pales in comparison to the more than 5,500 games on Steam that have been localized into Chinese.”)

Game Developer, “How Premium PC Games Continue To Rise, Surprise in China,” 5/28/2018, <https://www.gamedeveloper.com/business/how-premium-pc-games-continue-to-rise-surprise-in-china>. (“Tencent now operates two digital PC storefronts: WeGame (which currently hosts about 150 PC games, half of which are premium), and casual game portal QQ Game. These platforms accept Alipay and WeChat Pay as part of China’s trillion dollar mobile payment industry, making it easy for Chinese gamers to make purchases.”)

WeGame Developer Website, WeGame General FAQ For Developers, https://developer.wegame.com/developer/static/faq_en.html (accessed 6/7/2024). (“Only two languages are supported at the moment, English and Chinese.”)

In comparison, Steam supports “as many languages, currencies and payment methods as possible” and has “full official support for 29 languages across many platform features.” See:

Steamworks Website, Localization and Languages, <https://partner.steamgames.com/doc/store/localization> (accessed 7/9/2024).

5. Empirical and Yardstick Approaches Support Class-Wide Harm

5.1. Empirical approach

(89) One of the three approaches I adopt to show class-wide impact is my empirical approach.¹⁷¹ Looking at empirical evidence from the PC gaming market, I examine the impact of limited (and ultimately transitory) outbreaks of competition.¹⁷² I focus specifically on EGS’s entry and Valve’s response.¹⁷³ This approach is a “natural experiment.” One way a natural experiment can occur is when we can observe two time periods, one with specific conduct and one without, to determine the causal effect of that conduct.¹⁷⁴ Such natural experiment analyses are recognized in the economic literature and often used by economists.¹⁷⁵ Indeed, Dr. Langer testified that she worked under a respected economist who used a natural experiment.¹⁷⁶

¹⁷¹ Schwartz Report, 2/8/2024, § 7.4.

¹⁷² Schwartz Report, 2/8/2024, § 7.4.

¹⁷³ Schwartz Report, 2/8/2024, § 7.4.

¹⁷⁴ Schwartz Report, 2/8/2024, § 7.4.

ThoughtCo, “What Are Natural Experiments and How Do Economists Use Them?,” 4/10/2019, <https://www.thoughtco.com/natural-experiments-in-economics-1146134>. (“A natural experiment is an empirical or observational study in which the control and experimental variables of interest are not artificially manipulated by researchers but instead are allowed to be influenced by nature or factors outside of the researchers’ control. Unlike traditional randomized experiments, natural experiments are not controlled by researchers but rather observed and analyzed.”; “In the social sciences, particularly economics, the expensive nature and limitations of traditionally controlled experiments involving human subjects has long been recognized as a limitation for the development and progress of the field. As such, natural experiments provide a rare testing ground for economists and their colleagues. Natural experiments are used when such controlled experimentation would be too difficult, expensive, or unethical as is the case with many human experiments.”)

The Royal Swedish Academy of Sciences, “Natural Experiments Help Answer Important Questions,” 2021, at 1, available at: <https://www.nobelprize.org/uploads/2021/10/popular-economicsciencesprize2021-3.pdf>. (“One way of establishing causality is to use randomised experiments, where researchers allocate individuals to treatment groups by a random draw. This method is used to investigate the efficacy of new medicines, among other things, but is not suitable for investigating many societal issues – for example, we cannot have a randomised experiment determining who gets to attend upper-secondary school and who does not. Despite these challenges, the Laureates have demonstrated that many of society’s big questions can be answered. Their solution is to use natural experiments – situations arising in real life that resemble randomised experiments. These natural experiments may be due to natural random variations, institutional rules or policy changes.”)

The Royal Swedish Academy of Sciences, “Answering Causal Questions Using Observational Data,” 10/11/2021, at 1, available at: <https://www.nobelprize.org/uploads/2021/10/advanced-economicsciencesprize2021.pdf>. (“David Card began to analyze a number of core questions in labor economics using ‘natural experiments’, i.e., a study design in which the units of analysis are exposed to as good as random variation caused by nature, institutions, or policy changes.”)

¹⁷⁵ Schwartz Report, 2/8/2024, § 7.4.

¹⁷⁶ Ashley Langer, Dep. Tr., 6/21/2024, at 203:18–204:9.

(90) Using my natural experiment, I observe that Valve responded to EGS’s entry by launching its tiered commission rate system.¹⁷⁷ As I discuss in my Opening Report, in the real world, Valve responded to the threat of EGS’s entry by changing its commission rate structure(albeit to levels that were still supracompetitive).¹⁷⁸ In the but-for world, where there was no PMFN, Steam would have likely faced a more expansive competitive threat and likely much earlier than Epic’s entrance.¹⁷⁹ Steam would have faced multiple credible competitors, pushing Valve to lower its commissions further.¹⁸⁰ Thus, in the but-for world, Steam’s advertised commission rate would be lower than the lowest tier rate of 20% that Steam adopted for high-revenue games, and Epic’s 12% commission rate represents an effective floor that would still allow for Steam and other platforms to operate profitably.¹⁸¹

(91) The lower commission rate resulting from this limited response to competition in the real world already has benefited publishers. Indeed, Dr. Chiou agrees that the commission rate change from EGS’s entry benefited *all* publishers:¹⁸²

. . . I would say by introducing revenue shares through this additional revenue sharing that’s done for the highest-selling games, that yes, this benefits publishers, all publishers directly or indirectly, and this also benefits users through indirect network effects. . . . by having this revenue share, additional revenue share, that it benefits users and publishers both directly and indirectly.

* * * * *

By structuring its new revenue shares to benefit firms who publish the highest selling games, Steam benefits all users of its platform[.]

¹⁷⁷ Schwartz Report, 2/8/2024, § 7.4.

¹⁷⁸ Schwartz Report, 2/8/2024, § 7.4.

See, for example:

Valve, Emails Regarding New Revenue Share Communication, 11/26/2018–12/1/2018 (VALVE_ANT_0415674–684, at VALVE_ANT_0415674, VALVE_ANT_0415679–680, VALVE_ANT_0415684).

Steam, “New Revenue Share Tiers and Other Updates to the Steam Distribution Agreement,” 11/30/2018, <https://steamcommunity.com/groups/steamworks/announcements/detail/1697191267930157838>.

¹⁷⁹ Schwartz Report, 2/8/2024, § 7.4.

¹⁸⁰ Schwartz Report, 2/8/2024, § 7.4.

¹⁸¹ Schwartz Report, 2/8/2024, § 7.4.

¹⁸² Lesley Chiou, Dep. Tr., 6/18/2024, at 161:22–162:15. (Emphasis added.)

Chiou Report, 5/17/2024, ¶ 364.

meaningful alternatives to Steam and did not affect Valve's PMFN Policy or the enforcement thereof. The evidence Dr. Chiou relies on does not support the notion that Valve's commission rate change was a response to sustained competition in the market. See discussion in Section 4.2.

- (96) I have provided evidence both above and in my Opening Report—and Dr. Chiou has not provided any evidence on the contrary—that the impetus for publishers' return to Steam was a failure of their own platform or the inability to compete successfully on another third-party platform. In a world without the PMFN Policy, the publishers who left Steam would likely have done so earlier and competed more successfully on alternate platforms. This would have exerted meaningful competitive pressure on Valve, leading to competitive (*i.e.*, lower) commission rates, benefitting *all* publishers (which Dr. Chiou recognizes).¹⁹⁰
- (97) Dr. Chiou offers another argument that “Valve's introduction of tiered revenue shares. . . affected publishers differently—not class-wide—” and my approach “cannot be used to show class-wide antitrust impact with class-wide evidence.”¹⁹¹ It appears that Dr. Chiou is operating under an assumption that harm or “impact” to each publisher must be the *same* in order to show class-wide impact. I understand this is not the legal standard and, more importantly from my perspective, it makes no sense as an economic matter. Valve's other economic expert, Dr. Langer, agreed that impact is a “binary yes-or-no”, while damages relate to the magnitude of harm.¹⁹² To answer the question of class-wide impact, what matters is whether every class member is better off—to some degree—after removing the alleged conduct. Whether *damages amounts* are the same is a different issue; that the *impact* of Valve's behavior can be assessed with common evidence is not challenged by Dr. Chiou's evidence. In fact, Dr. Chiou reaches

¹⁹⁰ Chiou Report, 5/17/2024, ¶ 364.

¹⁹¹ Chiou Report, 5/17/2024, ¶¶ 365, 367.

¹⁹² Ashley Langer, Dep. Tr., 6/21/2024, at 64:1-65:5. (“Q. Yeah, and I assure you, Professor Langer, I'm not trying to go for a legal gotcha here. But are -- are you aware that -- as you use the terms in paragraph 14, are you aware that class-wide harm and class-wide damages are two distinct concepts? A. Yes, I am using class-wide damages and class-wide harm in this paragraph as two distinct concepts. Q. Okay. And what is your understanding of the distinction? A. Damages -- Dr. Schwartz is putting forward a damages model that is trying to calculate a number that's trying to get at the actual damages that each class member allegedly suffered from the challenged conduct. Harm is just, Were they harmed? It's not the same -- you know, damages is going after a specific number. Q. Okay. Would you agree that damages is a number whereas harm is a binary yes-or-no? A. That sounds approximately correct, yes. Q. Okay. So that's -- your understanding of class-wide harm, as you use the term, is a binary yes-or-no; is that fair? A. Yes. I would say when I'm using harm, I'm -- well, and Schwartz is using harm to be clear, so I'm replicating some of that language here. It's were people harmed, were class members, firms, in this case, but were class members harmed.”)

the same conclusion about class-wide impact when she offers the opinion that the tiered commission structure Valve imposed benefited *all* publishers on the platform.¹⁹³

- (98) Dr. Chiou claims that my opinion that in the but-for world, Valve’s commission rate would have changed for all publishers, is flawed because this is not in line with “Valve’s response to competition in the actual world.”¹⁹⁴ Dr. Chiou asks and answers the wrong question. How Valve responded to competition in the actual world in which it had substantial monopoly power and was able to maintain its PMFN in the face of the so-called competition outlined by Dr. Chiou is not relevant. Rather, the question is how Valve would have behaved in a world in which the PMFN did not exist and it did not have monopoly power sustained by the PMFN/faced meaningful competition on the merits from competing platforms. Dr. Chiou ignores this question.¹⁹⁵

5.2. Yardstick approach

- (99) I also presented my yardstick approach in my Opening Report to compare Valve’s commission rate on Steam to platforms in other comparable marketplaces.¹⁹⁶ I explained that a yardstick approach is a standard economic method for comparing one business/market to another business/market that is similar in important respects, often as a tool for understanding how a business may have performed “but for” certain actions or events.¹⁹⁷ Dr. Langer agrees that the yardstick approach is a “known and accepted” methodology.¹⁹⁸ I determined that using this approach is a reasonable and reliable method of assessing class-wide impact in this case.
- (100) I examined many potential benchmark industries and determined multiple comparable benchmarks based on a variety of measures, specifically online retail marketplaces and online

¹⁹³ Lesley Chiou, Dep. Tr., 6/18/2024, at 161:7–162:15.

¹⁹⁴ Chiou Report, 5/17/2024, ¶ 366.

¹⁹⁵ Dr. Chiou also offers no evidence to challenge the conclusion that competitors would have built up network effects that would make competing third-party platforms more attractive to smaller publishers, thus requiring Steam to compete for those publishers on price. Dr. Chiou does not dispute this claim.

¹⁹⁶ Schwartz Report, 2/8/2024, § 7.3.

¹⁹⁷ Blair, Roger D. and Amanda Kay Esquibel (1994), “Yardstick Damages in Lost Profit Cases: An Econometric Approach,” *Denver University Law Review* 72(1): 113–136, at 113–114.

Evans, Elizabeth A., Phil J. Innes, and Daniel G. Lentz (2017), “Damages Theories and Causation Issues,” in Roman L. Weil, et al., eds., *Litigation Services Handbook: The Role of the Financial Expert*, Hoboken, NJ: John Wiley & Sons, Inc., at 23.

¹⁹⁸ Ashley Langer, Dep. Tr., 6/21/2024, at 170:21–171:9.

vacation home rentals.¹⁹⁹ Comparing prices between Steam and these comparable benchmarks allowed me to consider the range of prices Valve likely would have charged to developers on Steam but for Valve’s alleged anticompetitive conduct.²⁰⁰ Commission rates in retail e-commerce and vacation home rental marketplaces generally fall within the 15% to 20% range.²⁰¹ This implies that the but-for commission rate in the relevant market would likely (conservatively) fall somewhere between 15% and 20%, well below Valve’s 30% commission rate and the effective rate from its tiered commission system.²⁰² Thus, all or virtually all putative class members were impacted by Valve’s supracompetitive commission rate.

(101) Dr. Langer argues that the benchmarks I identified in my Opening Report are not comparable because “the services provided by [my] benchmark firms end when a transaction is complete[,]” but Steam “provides ongoing services to its consumers after the purchase transaction[.]”²⁰³ I disagree with Dr. Langer. As explained in my Opening Report, and as further noted by Dr. Langer, “[a] yardstick approach or analysis ‘typically compares the plaintiff’s business to another business that is *substantially* similar[.]’”²⁰⁴ To do this, courts have sought comparability based on the “number of customers, purchase volume, product characteristics, competition, role of technology, capitalization, barriers to entry, and established history.”²⁰⁵ As such, I considered a variety of criteria with which to compare the third-party digital PC game distribution market, including, but not limited to, industry timing (*i.e.*, when firms first entered the marketplace), platform structure, geography, monetization structure, product characteristics, and other platform characteristics, such as potential network effects.²⁰⁶ Dr. Langer does not dispute the comparisons I draw in terms of these factors. A benchmark also need not be identical to the market at-hand. For these reasons,

¹⁹⁹ Schwartz Report, 2/8/2024, § 7.3.

²⁰⁰ Schwartz Report, 2/8/2024, § 7.3.

²⁰¹ Schwartz Report, 2/8/2024, § 7.3.

²⁰² Schwartz Report, 2/8/2024, § 7.3.

²⁰³ Langer Report, 5/17/2024, ¶ 210.

²⁰⁴ Langer Report, 5/17/2024, ¶ 207. (Emphasis added.)

See also: Ashley Langer, Dep. Tr., 6/21/2024, at 170:21–171:9.

²⁰⁵ Ray, Amy W. and Christopher D. Wall (2017), “Antitrust,” in Roman L. Weil, et al., eds., *Litigation Services Handbook: The Role of the Financial Expert*, Hoboken, NJ: John Wiley & Sons, Inc., at 19.

See also:

Schwartz Report, 2/8/2024, ¶ 282.

²⁰⁶ Schwartz Report, 2/8/2024, ¶ 284.

as identified in my Opening Report, I determined that these industries were reasonably and sufficiently comparable.²⁰⁷

- (102) Regardless, Dr. Langer testified that she is “not providing an affirmative statement about there not being an appropriate benchmark or there being an appropriate benchmark.”²⁰⁸ As such, Dr. Langer does not (and cannot) offer an opinion about whether the benchmarks I analyzed in my Opening Report are substantially similar. While Dr. Langer attempts to find differences between the benchmarks I outlined and the relevant market at-issue in this case,²⁰⁹ she ultimately does not come to an affirmative conclusion that these are not appropriate benchmarks or if there are other, better benchmarks that are more similar.
- (103) Putting aside this fundamental issue with Dr. Langer’s analysis, I disagree with Dr. Langer’s reasoning that the benchmarks I rely on may not be inappropriate. Dr. Langer misconstrues my testimony regarding how “services provided by [my] benchmark firms end when a transaction is complete” but not for Steam.²¹⁰ In deposition, I stated that a *transaction* on a retail goods platform or a home rental platform ends when they charge you.²¹¹ Dr. Langer then elaborates, stating that this differs from Steam, as “Steam provides ongoing services to consumers after the purchase transaction.”²¹² However, as I further testified, “Steam provides a platform through which the gamers who purchase the game are able to play it. That’s the role that Steam plays. But those services are not transaction-dependent.”²¹³ So while the transaction ends, the services do not.²¹⁴ Dr. Langer misses that point.

²⁰⁷ Schwartz Report, 2/8/2024, ¶ 296.

²⁰⁸ Ashley Langer, Dep. Tr., 6/21/2024, at 171:19–172:2.

²⁰⁹ Langer Report, 5/17/2024, ¶¶ 208, 210.

²¹⁰ Steve Schwartz, Dep. Tr., 4/18/2024, at 244:19–245:12. (“Q. Now, are there differences in post-sale duties between Steam and a retail goods seller like Amazon or a home rental site like Airbnb and VRBO? A. I’m not sure what you have in mind. Q. Well, let me tell you. So if I buy something on Amazon, they deliver it to my door, and unless I need to send it back for a refund, I’m pretty much done with that transaction, correct, from Amazon’s perspective? A. Assuming that there’s no problem or nothing that would require intervention by Amazon, they charge you correctly, I would agree, the transaction is complete.”)

Langer Report, 5/17/2024, ¶ 210.

²¹¹ Steve Schwartz, Dep. Tr., 4/18/2024, at 244:19–245:12.

²¹² Langer Report, 5/17/2024, ¶ 210.

²¹³ Steve Schwartz, Dep. Tr., 4/18/2024, at 248:6–18.

²¹⁴ The platform’s ability to offer continued services and transactions after an initial transaction is not unique to third-party digital PC platforms, nor to Steam specifically, and instead also applies to both online retail marketplaces and online vacation rentals. For example, Amazon offers ongoing services to its customers. A user (who has already completed a

- (104) Further, Dr. Langer considers the post-initial transaction market by looking only from the consumers’ point of view.²¹⁵ Dr. Langer provides no analysis or commentary on similarities between publishers on Steam and sellers on these other platforms. I show in my Opening Report that the agency pricing model (whereby sellers will set the retail price and the platform will set commissions or take rates on each sale) used in the relevant market at issue, is the same or similar in each of my benchmarks.²¹⁶
- (105) Even though Dr. Langer admits that she does not perform an affirmative analysis on potentially more comparable benchmarks,²¹⁷ Dr. Langer argues that I improperly exclude console platforms, which Dr. Langer states is a “more direct benchmark[.]”²¹⁸ It is impossible for Dr. Langer to make this claim, considering that she did not perform an affirmative relevant market analysis or any analysis to assess the relevant similarities and differences. She has no basis for her opinion. Dr. Langer testified that she is not “offering the affirmative opinion that console platforms are substantially similar to the Steam platform”²¹⁹ and that she did not analyze whether or not console platforms meet her criteria for comparability.²²⁰ Dr. Langer further adds that she is “not saying that [console] is a good benchmark[.]”²²¹ As such, Dr. Langer’s argument that consoles are a “more direct benchmark”²²² is speculative and misleading.

transaction) has the ability to leave seller feedback, contact a third-party seller, and leave comments, reviews, and feedback, as well as offering other services such as “Installation, Assembly, and Haul-Away Services[.]” See:

Amazon Website, Leave Third-Party Seller Feedback,

<https://www.amazon.com/gp/help/customer/display.html?nodeId=G5346HRPNJFYRA49> (accessed 6/15/2024).

Amazon Website, Installation, Assembly, and Haul-Away Services,

<https://www.amazon.com/gp/help/customer/display.html?nodeId=GRD263UR6NNUTT48> (accessed 6/15/2024).

²¹⁵ Langer Report, 5/17/2024, ¶¶ 210–211.

²¹⁶ Schwartz Report, 2/8/2024, ¶¶ 289, 294, 295.

²¹⁷ Ashley Langer, Dep. Tr., 6/21/2024, at 171:19–172:2.

²¹⁸ Langer Report, 5/17/2024, ¶ 212.

²¹⁹ Ashley Langer, Dep. Tr., 6/21/2024, at 177:14–17.

²²⁰ See, for example:

Ashley Langer, Dep. Tr., 6/21/2024, at 181:13–22. (“Q. Yep. Do console systems provide the ongoing services you describe in paragraphs 210 to 211? A. I would need to consider that. It’s not part of my assignment to propose a better benchmark for Dr. Schwartz. He -- I’m pointing out in paragraph 212 that there is a potential one that he’s not using. I’m not saying that that is a good benchmark. As I said earlier, one doesn’t have to use a yardstick approach. If there’s no appropriate benchmark, you can’t use a yardstick approach.”)

²²¹ Ashley Langer, Dep. Tr., 6/21/2024, at 181:13–22.

²²² Langer Report, 5/17/2024, ¶ 212.

(106) Dr. Langer ignores that console platforms have different pricing strategies and structures than digital PC game platforms. Steam has [REDACTED] costs and earns [REDACTED] gross margins in running its platform, at approximately [REDACTED].²²³ As on third-party digital PC platforms like Steam, online retail marketplaces and online vacation rental sell no physical product on which the platform is operating, allowing them to maintain relatively [REDACTED] gross margins. For example, from 2018 to 2023, Airbnb had a gross margin percentage of 79.8%.²²⁴ Similarly, over the same time frame, Etsy had a gross margin percentage of 70.8%.²²⁵ Conversely, console platform operators (*e.g.*, Sony and Microsoft) must sell a physical product, *i.e.*, the game console. As such, console platform operators have a dual pricing model in which one price is set for the equipment and another for later game transactions. Console developers may sell consoles at a loss initially (as does at least one console platform operator, Microsoft), to attract new users and then generate profits through game sales.²²⁶ Therefore, as an economic matter, console platform operators' pricing incentives are different from Valve's. As such, the underlying business structure of a console platform differs significantly from that of the third-party digital PC platform, meaning that console platforms are not sufficiently comparable to Steam, and certainly not more comparable than the benchmarks I provide in my Opening Report.

²²³ Schwartz Opening Report, 2/8/2024, Attachment D-5.

²²⁴ See Reply Attachment C-1.

²²⁵ See Reply Attachment C-2.

²²⁶ Note that I have been unable to find publicly available gross margin data for Xbox and PlayStation separately from Microsoft and Sony as a whole, respectively.

PC Mag, "Microsoft Loses Up to \$200 on Every Xbox Console Sold," 11/1/2022, <https://www.pcmag.com/news/microsoft-loses-up-to-200-on-every-xbox-console-sold>.

Investopedia, "The Economics of Gaming Consoles," 1/29/2022, <https://www.investopedia.com/articles/investing/080515/economics-gaming-consoles.asp>. ("Companies might sell the consoles at a loss initially to lure customers, gaining market share from competitors. The strategy looks to make up for any lost revenue by selling games and online subscriptions.")

Business Insider, "Xbox Consoles Have Never Been Profitable On Their Own, Microsoft Admits In Court," 5/6/2021, <https://www.businessinsider.com/xbox-consoles-not-profitable-microsoft-says-2021-5>. ("Instead of making money on the console itself, [Microsoft] makes money from games sales through its digital storefront, from subscription services like Xbox Game Pass, and from sales of accessories like gamepads."); "The gaming business is a profitable and high-growth business for Microsoft," a Microsoft representative told The Verge. "The console gaming business is traditionally a hardware subsidy model. Game companies sell consoles at a loss to attract new customers. Profits are generated in game sales and online service subscriptions.")

6. The PCM is a Well-Defined and Reasonable Model that Establishes Class-Wide Harm

6.1. Purpose of the model

- (107) In my Opening Report I present a Platform Competition Model (PCM), which I use to evaluate whether all, or nearly all, putative class members have been harmed by Valve’s enforcement of the PMFN.²²⁷ The model demonstrates that PMFNs in general increase platform fees and illustrates the primary mechanism driving that impact.²²⁸ The economic evidence shows Steam’s PMFN deters entry of competing platforms. The PCM demonstrates that, regardless of its impact on entry, Steam’s PMFN harms publishers.²²⁹ I then complete a numeric analysis using the PCM to evaluate whether there is harm to all class members, using model inputs that fit the facts of the case. I conclude there is class-wide harm.²³⁰
- (108) Dr. Langer agrees in her report that the Boik and Corts model underlying my PCM is “well suited” for “developing intuition regarding the economic forces surrounding PMFN policies.”²³¹ She also agreed at her deposition that the Boik/Corts model was published in a leading journal²³² and that the PCM is a model of a two-sided market.²³³ Nonetheless, Dr. Langer offers several critiques about the PCM which I address in turn.

²²⁷ Schwartz Opening Report, 2/8/2024, § 7.2.

²²⁸ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 118. (“The fundamental mechanism at work in raising [platform] fees and [consumer] prices in our model is that PMFN agreements reduce the elasticity of implied demand for a platform when considering its fee[.]”).

Schwartz Opening Report, 2/8/2024, § 7.2.

²²⁹ Schwartz Opening Report, 2/8/2024, § 7.2.

²³⁰ Schwartz Opening Report, 2/8/2024, § 7.2.2.

²³¹ Langer Report, 5/17/2024, at ¶ 173. (“It was originally developed and thus is well suited only for developing intuition regarding the economic forces surrounding PMFN policies. It is not a model that was designed to— or is well suited to— empirically quantify the effects of such specific policies in the real world.”)

²³² Ashley Langer, Dep. Tr., 6/21/2024, at 133:25–135:19.

²³³ Ashley Langer, Dep. Tr., 6/21/2024, at 118:12–25. (“Q. Okay. So would you agree that Dr. Schwartz’s platform competition model opinions are modeling two-sided platform -- Steam as a two-sided platform? A. I agree that the platform competition model is -- is a model that -- that substantially simplifies the world, and I don’t think accurately reflects this industry but that is two-sided. Let me just actually say one thing about that, though -- Q. Sure. A. -- which is that it does not incorporate network effects, which is a lot of what this conversation is about. So while it is two-sided, it does not have network effects in it.”)

6.1.1. The PCM is not a “stylized theoretical model”

- (109) First, Dr. Langer describes the PCM as a “stylized theoretical model that is not designed to capture the empirical complexities of the video game industry.”²³⁴ Her generic critique in her report reflects an apparent misunderstanding of the purpose of the model in the context of the original Boik and Corts paper and with respect to my PCM. Boik and Corts state that their model “show[s] that platform MFNs typically raise platform fees and retail prices[.]”²³⁵ Their results apply to complex real-world industries. They state: “These results have important implications for ongoing antitrust scrutiny of these policies in e-book markets, travel websites, and other online marketplaces.”²³⁶ The conclusions and scope of statements from Boik and Corts support my choice to construct my PCM from their model and to use it to evaluate the fact of harm in this case. My PCM is a robust model and can explain the “economic forces surrounding PMFN policies” that lead to competitive harm.²³⁷
- (110) The PCM is a very robust model, but it does not reflect reality perfectly. No model does so—economic models make simplifying assumptions that try to capture the basic economics of a scenario. Dr. Langer agrees:²³⁸

Q. Okay. And when you use the term “accurately,” are you using that in a sense that it has to be 100 percent accurate?

A. No. All models are simplifications, and we always have to come up with ways to model the actual industry. It won't capture every detail. What's important -- and I have various cites through textbooks and things like that throughout my report -- what's important about models is that they capture the key forces that are affecting outcomes. It depends on your question. So to speak about the questions Dr. Schwartz is asking here that affect the decisions that the platforms, the publishers and the consumers are making in the industry that are related to the challenged conduct and then capturing the --

²³⁴ Langer Report, 5/17/2024, at § 5.2.

²³⁵ Boik, Andre, and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 105. (“We show that platform MFNs typically raise platform fees and retail prices, and also curtail entry or skew positioning decisions by potential entrants pursuing low-end business models.”)

²³⁶ Boik, Andre, and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 128.

This statement puts Dr. Langer firmly at odds with the authors regarding their intentions and scope of what the model can be used for. See:

Langer Report, 5/17/2024, ¶ 173. (“It was originally developed and thus is well suited only for developing intuition regarding the economic forces surrounding PMFN policies.”)

²³⁷ Langer Report, 5/17/2024, ¶ 173. (“It was originally developed and thus is well suited only for developing intuition regarding the economic forces surrounding PMFN policies.”)

²³⁸ Ashley Langer, Dep. Tr., 6/21/2024, at 67:11–68:6.

in this case, the alleged PMFN and understanding how removing it, if it were there, would impact your model. And so it does not have to be perfect, but it has to capture the key interactions that are relative to the question at hand.

- (111) Models are used to focus on the relevant aspects that have the potential to impact the behaviors and outcomes being studied. Dr. Langer agrees: “Inherently, models must be simpler than the real world, but a reliable model must capture the main characteristics of the industry and the decisions that *affect economic outcomes*.”²³⁹ Because of this, an easy but meaningless critique to make of an economic model is simply pointing out aspects of the real world that are not explicitly modeled and postulating about their importance. A substantive critique would show why such omissions matter. In her report, Dr. Langer focuses her attention on the former, and pays no attention to the latter.
- (112) Dr. Langer and I agree that the PCM does not capture every element of the real world. Strikingly, Dr. Langer does not (and cannot) explain how any claimed omissions in the model would undermine the model’s conclusion that Valve’s PMFN Policy caused harm to publishers. That is, she cannot explain how any omissions affect the relevant economic outcomes. In her deposition, Dr. Langer carefully avoided offering any affirmative opinions, including giving an opinion on the impact of a PMFN on competition in the video game industry.²⁴⁰ Additionally, Dr. Langer states that she relied on only eleven case documents for her entire report,²⁴¹ saying that “these are the things that I found important for forming my opinions.”²⁴² Without any

²³⁹ Langer Report, 5/17/2024, ¶ 16. (Emphasis added.)

Ashley Langer, Dep. Tr., 6/21/2024, at 67:11–68:6. (“Q. Okay. When you use the term ‘accurately,’ are you using that in a sense that it has to be 100 percent accurate? A. No. All models are simplifications, and we always have to come up with ways to model the actual industry. It won’t capture every detail. What’s important -- and I have various cites through textbooks and things like that throughout my report -- what’s important about models is that they capture the key forces that are affecting outcomes. . . .”)

²⁴⁰ Ashley Langer, Dep. Tr., 6/21/2024, at 32:16–20. (“Q. Understood. So you’re not affirmatively offering the opinion that the PMFN leads to pro-competitive effects, correct? A. I am not offering an affirmative opinion on a PMFN in the video game industry, no.”)

See also:

Ashley Langer, Dep. Tr., 6/21/2024, at 30:21–31:4, 31:11–22. (“Q. Okay. So you are not opining on whether the PMFN exists or not; is that right -- is that right? A. I am not opining on whether the PMFN exists or not. Q. Okay. And you are not opining on whether Valve has market power in some relevant market, correct? A. Correct. I am not opining on whether Valve has market power in some market or any market.”; “Q. Have you reached any opinions regarding whether PMFN clauses in general can be anticompetitive? A. Again, my assignment is to respond to Dr. Schwartz. Dr. Schwartz’s models are -- well, let me say, Dr. Schwartz’s models are supposed to -- he says that they are modeling what the world currently looks like and what it would look like absent the challenged conduct, which is in this case is alleged -- an alleged PMFN. So I understand the economic literature on PMFNs, and I understand what Dr. Schwartz is doing. I’m not reaching any conclusions in this case on that.”)

²⁴¹ Ashley Langer, Dep. Tr., 6/21/2024, at 23:18–24:7.

²⁴² Ashley Langer, Dep. Tr., 6/21/2024, at 25:2–7.

analysis of the relevant documents in the case—precisely the sorts of documents one would expect an economist to review and consider—Dr. Langer’s claims that the complexities of the video game industry are not captured by my model are meritless. A more complex model is needed only when there is an affirmative opinion and demonstration that the additional complexity is needed to be able to reach an accurate conclusion. Reaching this conclusion *requires* a thorough and careful analysis of the relevant facts in the case, including a full-set of relevant case materials. Dr. Langer’s opinions cannot stand up to that basic requirement.

(113) Dr. Langer also opines that “[i]nstead of such stylized theoretical models, economists generally use rich empirical models to make quantitative predictions about the but-for world, as I mentioned above.”²⁴³ Her definition of “an empirical model” is one that “bring[s] data to -- numbers to the question” and “build[s] data into the model.”²⁴⁴ That is exactly what I do through the PCM in my numerical analysis—I use data available from the market to calibrate the PCM, and draw from it reliable economic results. Indeed, Dr. Langer agreed at her deposition that, despite opining that economists would prefer “rich empirical models” over the PCM in her report, the PCM was an empirical model under her own definition of empirical.²⁴⁵ Dr. Langer also testified that a model should only include “key interactions that are relevant to the question at hand.”²⁴⁶ By any reasonable assessment, my model passes that test. I show below that many of the factors Dr. Langer identifies as missing from the PCM are omitted precisely because they clearly do not influence the conclusion that Valve’s PMFN causes competitive harm. Including them in the model would add significant (and needless) complexity, purely for the sake of complexity, and without any gain in analytical robustness. The conclusion that publishers are harmed by the PMFN is robust to a range of inputs, including those that most closely match the facts of this case.

²⁴³ Langer Report, 5/17/2024, ¶ 175.

²⁴⁴ Ashley Langer, Dep. Tr., 6/21/2024, at 144:5-14.

²⁴⁵ Ashley Langer, Dep. Tr., 6/21/2024, at 146:3–10, 146:23–147:4. (“Q. Well, you haven’t testified -- would you agree -- yes or no -- that the PCM is an empirical model as you’ve defined it? A. Dr. Schwartz’s PCM brings data to a stylized theoretical model, and that makes it empirical if -- and yet not appropriate to this industry, in my opinion.”; “Q. So structural means based on an underlying theoretical framework. Isn’t that what Dr. Schwartz does by relying on the underlying theoretical framework of the Boik and Corts paper? A. Dr. Schwartz is relying on the stylized theoretical model of Boik and Corts for his PCM. That -- the PCM is a structural model in that way.”)

²⁴⁶ Ashley Langer, Dep. Tr., 6/21/2024, at 67:11–68:6.

- (114) In my Opening Report, I explained that removing a PMFN clearly and directly reduces platform fees by increasing the elasticity of platforms’ implied demand.²⁴⁷ Without the PMFN, publishers are free to price games lower on low-fee platforms than high-fee platforms. With lower prices on low-fee platforms, consumers will be more likely to switch away from high-fee platforms. This increased competition for consumers drives down fees to publishers because content attracts users, and a platform needs the content provided by publishers to compete for consumer attention and business.²⁴⁸ Put simply, price competition is eliminated when the PMFN is in place, and fees to publishers are higher.²⁴⁹ As Dr. Langer suggests, the PCM model shows this result using “a small change: the removal of the alleged conduct, holding everything else constant.”²⁵⁰ Specifically, the PCM’s only change is removing the PMFN. None of the additional complexities or changes suggested by Dr. Langer would change the fundamental mechanisms at work. Absent the PMFN, publishers will respond more aggressively to platform-specific fees with price changes and consumers will respond to those price changes. This means that without the PMFN, consumers are more likely to switch platforms and Steam’s profit maximizing fee will be lower. Dr. Langer does not—and cannot—show that any of the complexities she identifies actually matter for purposes of this fundamental result. Thus, for the purposes here, those complexities are irrelevant, and Dr. Langer is wrong.
- (115) In my Opening Report, I show the PCM demonstrates class-wide harm over a wide range of applicable parameters. Dr. Langer and I agree that the fact of harm is a binary result (*i.e.*, yes or no) and so depends only on the direction of harm.²⁵¹ My numeric analysis uses the data points available to demonstrate that the conclusion that the PMFN harms competition and

²⁴⁷ Schwartz Opening Report, 2/8/2024, ¶ 261.

Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 118. (“The fundamental mechanism at work in raising [platform] fees and [consumer] prices in our model is that PMFN agreements reduce the elasticity of implied demand for a platform when considering its fee[.]”)

²⁴⁸ Schwartz Opening Report, 2/8/2024, ¶ 255–261.

²⁴⁹ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 123. (“Again, the basic intuition is that a firm seeking to compete on the basis of low price (typically, a demand-disadvantaged or marginal-cost-advantaged firm) has a hard time competing when the possibility of undercutting the higher-value, or higher-cost incumbent is precluded.”)

²⁵⁰ Langer Report, 5/17/2024, ¶ 73. (“The predictions of the but-for world should follow from a small change: the removal of the alleged conduct, holding everything else constant.”)

²⁵¹ Ashley Langer, Dep. Tr., 6/21/2024, at 64:20–65:5. (“Q. Okay. Would you agree that damages is a number whereas harm is a binary yes-or-no? A. That sounds approximately correct, yes. Q. Okay. So that’s -- your understanding of class-wide harm as you use the term, is a binary yes-or-no; is that fair? A. Yes. I would say when I’m using harm, I’m -- well, and Schwartz is using harm to be clear, so I’m replicating some of that language here. It’s were people harmed, were class members, firms, in this case, but were class members harmed.”)

publishers is consistent with case-specific facts and to more clearly illustrate the mechanisms leading to that harm. Despite Dr. Langer’s claims that “richer model” is needed, a “richer model” is both impractical in this case and unnecessary to show harm.²⁵² My numeric analysis of the PCM model is an empirical approach that applies economic analysis to the facts and data available in this case and proves that the PMFN causes harm to publishers.

6.1.2. The model demonstrates impact from Valve’s PMFN and is not used to model the but-for world

- (116) Dr. Langer claims that my PCM “model is ill-equipped to model the video game industry” in the but-for world.²⁵³ Dr. Langer either fundamentally misunderstands my application of the PCM to this case or chooses to ignore its purpose. Either way, her arguments regarding the but-for world in relation to the PCM are misplaced and irrelevant.
- (117) As I state in my Opening Report, I use the PCM to evaluate whether all, or nearly all, putative class members have been harmed by Valve’s enforcement of the PMFN.²⁵⁴ I conclude that there has been class-wide harm, and Dr. Langer has not offered any affirmative opinion to the contrary.²⁵⁵ The PCM is premised on, and the corresponding numerical analysis is calibrated on, the actual world which reflects Valve’s anticompetitive conduct. As stated in my Opening Report, I do not use it for modelling the but-for world in equilibrium.²⁵⁶
- (118) Thus, rather than modeling the fully-competitive but-for market, the PCM models the relatively immediate (*i.e.*, near-term) effects of Valve removing the PMFN based on current market conditions. Dr. Langer does not address this point or identify any reason why the PCM cannot model these effects.

²⁵² Langer Report, 5/17/2024, ¶ 173.

²⁵³ Langer Report, 5/17/2024, ¶ 166.

²⁵⁴ Schwartz Opening Report, 2/8/2024, § 7.2.

²⁵⁵ Ashley Langer, Dep. Tr., 6/21/2024, at 65:17–23. (“Q. Okay. So you’re not affirmatively offering the opinion that there is a class member or multiple class members that would be better off in the world with the Valve PMFN in place, correct? A. I’m not providing affirmative opinions about what individual class members’ damages or harm would be. I’m just analyzing Dr. Schwartz’s models.”)

²⁵⁶ Schwartz Opening Report, 2/8/2024, ¶ 280. (“By calibrating the [PCM] on the current market conditions, the parameters and results reflect Steam’s advantage gained through years of Valve’s anticompetitive conduct via its PMFN Policy. Over time, or in the but-for world where this conduct had not taken place, Steam’s advantageous position gained through the wrongful conduct would decrease and the competition it faced from the competing platforms would be even more vigorous. Also, [the PCM] shows a near-term response to the removal of the PMFN Policy based on the real world (*i.e.*, one influenced by Steam’s anticompetitive conduct), rather than the end-state market in the but-for world in which the PMFN Policy never existed. Thus, these estimates do not fully model the end-state impact of the absence of the PMFN Policy on all parameter values in the but-for market.”)

- (119) Dr. Langer offers other critiques regarding the PCM that are similarly flawed. For example, in her report, Dr. Langer states the PCM “[i]s not a model that was designed to—or is well suited to— empirically quantify the effects of [PMFN] policies in the real world.”²⁵⁷ I never offered the PCM to “empirically quantify the effects of [PMFN] policies in the real world”—that is the role of my damages calculation. Dr. Langer’s critique confuses the question of harm with the measurement of damages, though she acknowledges that the questions of harm and damages are distinct, with the question of harm being binary (either yes or no).²⁵⁸ Accordingly, Dr. Langer mischaracterizes my analysis by trying to apply a standard that is inapplicable to my use of the PCM.
- (120) Regarding network effects, Dr. Langer states the PCM “prevents the new entrant from becoming a stronger competitor relative to the incumbent over time[.]”²⁵⁹ As noted, my analysis evaluates the near-term effects of Valve removing the PMFN based on current market conditions. It is a static analysis, meaning that it is not intended to capture the dynamics of entry, exit, or market evolution “over time.”
- (121) Dr. Langer states “Dr. Schwartz acknowledges that Steam and EGS are two-sided platforms that benefit from direct and indirect network effects, which would not justify a large and fixed ‘demand disadvantage’ that remains persistent after the entry of the competing platforms.”²⁶⁰ But the demand disadvantage for EGS in the model reflects the economic reality that Steam has directly benefited from its anticompetitive PMFN to obtain a dominant position in the market relative to competitors. The removal of the PMFN today would not immediately erode Steam’s demand advantage, which has been built up and maintained through anticompetitive means for years.²⁶¹ Dr. Langer’s critique is, once again, misplaced.

²⁵⁷ Langer Report, 5/17/2024, ¶ 173.

²⁵⁸ Ashley Langer, Dep. Tr., 6/21/2024, at 63:15–65:5.

²⁵⁹ Langer Report, 5/17/2024, ¶ 177.

Similarly, Dr. Langer states that the PCM “does not allow for platforms to use growth strategies that develop over time[.]” See: Langer Report, 5/17/2024, ¶ 177.

²⁶⁰ Langer Report, 5/17/2024, ¶ 178.

See also:

Langer Report, 5/17/2024, ¶¶ 191–194.

²⁶¹ To be clear, the fact that my numerical analysis in my Opening Report has EGS with a larger market share than Steam after the removal of the PMFN is not reflective of a reduction in EGS’ demand disadvantage; rather, the shares reflect movements along the respective demand curves due to price movements.

6.1.3. The model captures key aspects of the market relevant to the PMFN Policy

- (122) My PCM incorporates the most critical aspects of the online PC game market. The model matches the structure of the market and the pricing conduct, as well as Valve’s alleged conduct. The model is explicitly designed to study a situation where a platform matches buyers to sellers (here, users to publishers) and charges a single price to sellers (here, Valve’s commission from Steam) while the sellers set the prices that they charge to consumers (here, game prices to users).²⁶² The model considers a PMFN policy put in place by the platform requiring sellers to price the lowest on that platform (in practice, setting prices equally across platforms).²⁶³ The model also allows for one platform to have a demand advantage (*i.e.*, higher market share for any price when price parity holds) over other platforms.²⁶⁴ This reasonably describes the situation in this relevant market. This allows the model to incorporate differences in platform features, as well as network effects.
- (123) The model also reduces the market’s complexities into elements that are relevant to the question at hand. Dr. Langer and I agree that the industry has “multiple and differentiated platforms.”²⁶⁵ Platforms can differ in a variety of ways, and yet those differences are only relevant to the impact of the PMFN if consumers care about the differences. The color of the homepage,²⁶⁶ for example, only matters with respect to the impact of a PMFN if consumers

²⁶² Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 105, 110–111. (“In situations in which a seller sets a price and transacts with a buyer through an intermediary platform (which may collect a fee or a commission from the seller), such contracts restrict the seller not to sell through any alternative platform at a lower price.” See also the introduction of the model on pages 110–111.)

Schwartz Opening Report, 2/8/2024, ¶¶ 251–254.

²⁶³ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 111. (“However, the seller may also face a constraint imposed by the presence of one or more PMFN agreements. Therefore, this implied demand function varies with the PMFN regime.”)

Schwartz Opening Report, 2/8/2024, ¶¶ 254–255.

²⁶⁴ Schwartz Opening Report, 2/8/2024, ¶ 252.

Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 123, 133–134. (“We present in Appendix D the expressions for the relevant optimal pricing rules, implied demand functions, and equilibrium fees for the asymmetric case.”)

²⁶⁵ Langer Report, 5/17/2024, ¶ 178. (“In the real world, the video game industry has multiple and differentiated publishers that sell multiple and differentiated games to multiple and differentiated consumers on multiple and differentiated platforms.”)

²⁶⁶ This is a feature that was considered by Valve employees to be an important aesthetic decision. In internal emails, a Valve employee notes, “A few developers remarked that Steam ITSELF—not just the games on it—has an aesthetic. ‘You wouldn’t just leave your kid on Steam.’ ‘When my wife looks at Steam, she says, ‘This is a dark science fiction thing for boys.’” The

alter their purchasing decisions based on homepage color. Rather than needlessly measuring the impact of homepage color and every other potential platform difference Dr. Langer can think of, I determine the extent to which platform differences *collectively* impact consumer demand, which is the more relevant issue. If Steam has more attractive platform features overall, Steam will see more demand overall, even at equal prices to rival platforms. Dr. Langer’s report and testimony ignores the relationship between platform features and consumer demand. Dr. Langer testified that “[t]here are consumers who care more about just getting to their games quickly. You know, there’s lots of dimensions of quality. So this X thing doesn’t just go small to big. It varies in many, many different ways.”²⁶⁷ While there are different features consumers care about, she is mistaken about what the demand disadvantage parameter, *X*, is. *X* represents a difference in the quantity demanded between the platforms at a given price when price parity holds, which is unidimensional. As I explained above, *X* captures platform features by measuring how those features translate into differences in the quantity demanded *overall*. Some platforms may be better or worse on certain dimensions, but how those collectively translate into sales is what is relevant to the analysis and effectively captured by *X*.²⁶⁸ That is the relevant question; Dr. Langer’s critique obscures the issue that matters and adds complication purely for its own sake.

- (124) In the actual world, Valve’s PMFN forces prices to be the same. Thus, *X* can be observed directly using the real-world market shares. Steam’s market share is ██████ while the sum of the competitors’ market share (which I labeled as EGS for illustration in my Opening Report) is ██████²⁶⁹ This real-world difference in market shares is captured by the model parameter *X* and is the difference in demand at equal prices resulting from variation in platform features, among other factors.²⁷⁰ Contrary to Dr. Langer’s assertions, this captures the impact on demand of all the differing platform features (including network effects).
- (125) Dr. Langer also recognizes that consumers have a variety of preferences for games and platforms, but states that “[t]he PCM assumes that consumers’ decisions about where to buy

email goes on to say that Steam “has its own particular language of style and signifiers, in a way that is much less true for, say, Amazon or Netflix. . . . It would be surprising if this had no impact whatsoever.” See:

Valve, Emails on Boston Developer Meet-up, 10/5/2018 (VALVE_ANT_0054709–714, at VALVE_ANT_0054712).

²⁶⁷ Ashley Langer, Dep. Tr., 6/21/2024, at 91:25–93:6.

²⁶⁸ As a general matter, that also matches the way economists understand consumer behavior when facing a set of differentiated options. Choices are made based on preferences for the bundle of attributes of each product and decisions across the set of consumers which reflect the combined impact of the attributes on consumer behavior.

²⁶⁹ Schwartz Opening Report, 2/8/2024, ¶ 132.

²⁷⁰ Schwartz Opening Report, 2/8/2024, ¶ A4.

the model’s single game depends solely on: (i) the game’s relative prices across platforms; and (ii) the entrant’s assumed ‘demand disadvantage.’²⁷¹ That assertion is incorrect. Dr. Langer fundamentally misrepresents how to model demand with a demand curve.

- (126) The market demand curve shows the relationship between the price of a good and the quantity demanded of that good, but it does not assume that the price is the only factor individuals consider in their consumption decisions.²⁷² Surely, Dr. Langer knows this, but she chooses to ignore this basic principle. In fact, variation in individual preferences is exactly why some consumers would purchase from Steam at a given price while others would choose to purchase from competing platforms. My PCM allows for and accounts for this individual variation in preferences. Without variation in individual preferences, all consumers would make identical decisions. The specific reasons why consumers have different preferences for Steam versus competitors other than the price is not critical to the question at hand. Including these preferences more explicitly into the model would not be helpful in addressing the relevant issue of how behavior changes in the face of “a small change: the removal of the alleged conduct, holding everything else constant.”²⁷³ Some consumers may like the color of the Steam homepage more than others.²⁷⁴ This preference may lead some consumers to purchase from Steam and others to purchase from competitors.²⁷⁵ These differences are captured in the relative demand at a given price on each platform in both the PMFN and no-PMFN scenarios.

6.1.4. A statistical regression model of the sort proposed by Dr. Langer is not appropriate given the facts of the case

- (127) Dr. Langer makes the general statement that “[r]icher [empirical] models are better equipped to capture the complex real-world interactions between economic actors. Therefore, such models can better capture important industry facts and economic outcomes that are salient to the relevant questions.”²⁷⁶ As mentioned, my numeric analysis of the PCM is empirical,

²⁷¹ Langer Report, 5/17/2024, ¶ 178.

²⁷² Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 67.

²⁷³ Langer Report, 5/17/2024, ¶ 73. (“The predictions of the but-for world should follow from a small change: the removal of the alleged conduct, holding everything else constant.”)

²⁷⁴ Valve, Emails on Boston Developer Meet-up, 10/5/2018 (VALVE_ANT_0054709–14, at VALVE_ANT_0054712).

²⁷⁵ It is important to point out that the mere fact that a consumer prefers one feature of a platform over another does not mean that the consumer *acts* on that preference. This is a critically important point that Dr. Langer misses entirely.

²⁷⁶ Langer Report, 5/17/2024, ¶ 173.

Langer Report, 5/17/2024, ¶ 175. (“Instead of such stylized theoretical models, economists generally use rich empirical models to make quantitative predictions about the but-for world, as I mentioned above.”)

even under Dr. Langer’s definition, and a “richer” (or more complicated) model is only an improvement if the additional complexities add explanatory power by being pertinent to the outcome being studied.

- (128) To the extent Dr. Langer is proposing I utilize a statistical regression model, which is unclear, she asks for something that Valve has made impossible. Purely empirical methods, absent any theory or “structure”, generally center around comparing outcomes in real world situations with and without a given policy or action.²⁷⁷ There is no “clean” period here; there was never a period in which Valve did not behave anticompetitively through the PMFN. There is no period where Valve’s conduct mirrored the conduct in the but-for world. Evidence suggests that Valve began enforcing price parity at least as early as 2009.²⁷⁸ Thus, there is no real-world time period with which to make a before and after or difference in difference comparison. Attempting an approach such as this would be inappropriate as it would require using only data from time periods where the PMFN policy is in place, and thus this data would not fit the model or accurately estimate the impact of the conduct.

6.2. Assumptions made adhere to the real world

- (129) As mentioned, Dr. Langer and I both agree that all economic models are necessarily simpler than the real world.²⁷⁹ Our disagreement is whether the assumptions I make in my PCM impact my conclusions. It is telling that Dr. Langer does not explain how altering *any* of my assumptions would lead to different conclusions. However, to make it clear that her critique is wrong, I address her concerns by reviewing key assumptions made in the PCM. I explain how my assumptions adhere to the real world, and why the ways in which these assumptions deviate from the real world do not impact the substance of my results.

²⁷⁷ DiNardo, John (2018), “Natural Experiments and Quasi-Natural Experiments,” in Durlauf, Steven, and Lawrence E. Blume, ed., *The New Palgrave Dictionary of Economics*, London: Springer Nature, at 9325–9336.

²⁷⁸ Schwartz Opening Report, 2/8/2024, ¶ 175.

²⁷⁹ Langer Report, 5/17/2024, ¶ 16. (“Inherently, models must be simpler than the real world, but a reliable model must capture the main characteristics of the industry and the decisions that affect economic outcomes.”)

6.2.1. Steam acts to maximize its profits

(130) In my PCM, I assume that Valve acts to maximize its own profits on Steam. This is consistent with standard economic models,²⁸⁰ and I see no evidence that Valve behaves differently. Dr. Langer seemingly agrees that firms should maximize profits.²⁸¹ She claims, incorrectly, that in the numeric analysis of the PCM, Steam does “not set its revenue share to maximize its profit but would instead set it in a way so that the publishers are indifferent between staying on Steam or leaving the platform.”²⁸² Dr. Langer is mistaken, because these are one and the same in this case. In my numeric analysis of the PCM, Valve maximizes its profits on Steam by setting its revenue share such that publishers are indifferent between staying on Steam and leaving the platform.²⁸³ It is not an alternative to profit maximizing behavior. It is the way that Valve achieves its goal of profit maximization.²⁸⁴ If Valve charges even one dollar above this price, economics predicts publishers will flock to the alternative platform or exit the market.²⁸⁵

²⁸⁰ Mas-Colell, Andreu, Michael D. Whinston, and Jerry R. Green (1995), *Microeconomic Theory*, 1st ed., New York, NY: Oxford University Press, at 135. (“We assume throughout this chapter that the firm’s objective is to maximize its profit.”)

Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 270. (“The goal of a firm is to maximize profit, which equals total revenue minus total cost.”)

²⁸¹ Langer Report, 5/17/2024, ¶ 179.

Ashley Langer, Dep. Tr., 6/21/2024, at 82:21–83:11. (“... A. As an economist, we generally model actors in model -- in industries as making optimal decisions for themselves, so economically optimal. ...”)

²⁸² Langer Report, 5/17/2024, ¶ 179.

²⁸³ Dr. Langer appears to have misread a sentence in my Opening Report without considering what the model is actually doing. Dr. Langer states, “For instance, [Dr. Schwartz] assumes that Steam is no longer setting its revenue share to maximize its profits. See Schwartz Report, ¶ A2 (“Rather than maximize their profits by setting marginal revenue equal to marginal costs, Steam would need to set its price at the highest level that still keeps the seller in the market. . . Steam would lower their fees until sellers are just indifferent between selling on Steam and their next best option.”). In fact, what I am saying here is that Steam is maximizing their profits, but to do so they must set their fee such that sellers are just indifferent between Steam and their next best option. This maximizes Steam’s profits since setting marginal revenue equal to marginal costs would result in zero profits for Steam as a result of developers exiting Steam. See:

Langer Report, 5/17/2024, fn. 277.

²⁸⁴ Dr. Langer further misrepresents my work by claiming that I present two approaches to Steam’s profit maximization. This is not the case. In several places Dr. Langer falsely refers to the interior and corner solutions as separate approaches. See for example,

Langer Report, 5/17/2024, ¶ 180. (“Fourth, Dr. Schwartz has not shown that his solution to his PCM under his second approach is a valid solution of the model.”)

Langer Report, 5/17/2024, ¶ 169. (“Dr. Schwartz conducts an empirical analysis of his PCM by using two approaches. . .”).

However, the interior solution is simply a necessary step in finding the correct solution, which I label the corner solution. See the discussion above.

²⁸⁵ Whether they exit the market or switch to the alternative platform depends on the profits they can expect to make by listing on the competing platform only. The two scenarios can be seen in the upper and lower bound estimates I presented in Appendix Tables A.1 and A.2 of my Opening Report. In either case, publishers are harmed by the PMFN.

- (131) All firms in my model, both platforms and publishers, choose fees and prices, respectively, to maximize their own profits. To determine Steam's profit maximizing fee in my numeric solution, I check two potential transaction fees and choose the one where Steam gets the most profit.²⁸⁶ I label these two potential profit maximizing fees as the interior solution and the corner solution.²⁸⁷ The first potential profit maximizing point I check is the interior solution. This is where I (a) assume that the developer can earn profits that would allow it to keep producing games and (b) find Valve's *potential* profit maximizing point by setting the marginal revenue equal to marginal cost for Steam (or maximizing their profit function).²⁸⁸ While this may seem like the best option for Valve, as I point out in my Opening Report, it results in negative total economic profits across both platforms for developers.²⁸⁹ Developers could not and would not operate in this scenario (my assumption above is violated) and so Valve's profits for Steam would in fact be *zero* (with no developers, no sales would occur).
- (132) Given that profits in this scenario would be zero, Valve's profit maximizing strategy is *not* the interior solution. To earn profit, Valve needs to keep the developer in the market. The corner solution is the fee that both maximizes Valve's profits on Steam and allows the developer to stay in the market. This solution results in the most profit possible for Steam (see Table 3 in my Opening Report).²⁹⁰ Both Dr. Langer and I agree that Valve should maximize its profits on Steam; Valve does so by setting its transaction fee such that publishers are indifferent between staying on Steam or leaving Steam.

Negative seller economic profits on Steam are a logical result given the facts of the case and not a critical assumption

- (133) The numeric solution I present in my Opening Report Table 3 results in negative economic profits for the developer on Steam, but *zero economic profits* overall.²⁹¹ This result is consistent

²⁸⁶ Schwartz Opening Report, 2/8/2024, ¶ A3–A30.

²⁸⁷ MIT OpenCourseWare, "Lecture 4 - Utility Maximization," 2016, at 4–5, available at: https://ocw.mit.edu/courses/14-03-microeconomic-theory-and-public-policy-fall-2016/662896910b5530e160224afe6ac30752_MIT14_03F16_lec4.pdf.

²⁸⁸ Schwartz Opening Report, 2/8/2024, ¶ A3–A17.

²⁸⁹ Schwartz Opening Report, 2/8/2024, ¶ A17.

²⁹⁰ Schwartz Opening Report, 2/8/2024, ¶ 274. (As I discuss below, I do present another corner solution as a result of different assumptions in the appendix. Neither of these solutions, however, is an interior solution and in both cases Steam is maximizing its profits given the parameters and assumptions of the model.)

²⁹¹ Schwartz Opening Report, 2/8/2024, ¶ 274. (Total seller economic profits with the PMFN in place on Steam and EGS in Table 3 total zero. Also note that my results reference *economic* profit and not accounting profit. It is well established in economics that a firm can report positive accounting profits in its books and records and still record zero (or even negative) economic profits.)

with standard economic assumptions and closely matches the facts of the case. Moreover, as I show in my Opening Report Appendix Table A.2, the negative economic profits are not driving the result.²⁹² Even with positive economic profits on Steam and competing platforms, developers are still harmed by Steam's PMFN policy.

(134) Dr. Langer and I agree that developers "would likely exit [a market] if they earned negative profits over the long term."²⁹³ This is precisely why the corner solution I described above is correct. For Steam to earn profits and keep developers in the market, developers must not earn negative *total* economic profits.²⁹⁴ My PCM is consistent with this requirement since economic profits in the PC gaming market for developers in my model are zero. Rather than being "inherently mis-specified" as Dr. Langer claims, this is precisely in line with the economic argument she herself lays out and consistent with firms acting to maximize their own profits. Exiting the market would result in zero economic profits (by definition) for the developer and staying in the market also results in zero profits. So, the developer has no incentive to exit. If Valve lowered the fee further to allow developers to earn positive profits, Valve's profits would be lower. So, Steam's platform fee in the corner solution is their profit-maximizing fee.

(135) In my Opening Report, I showed that the developer earning zero economic profits is not a critical assumption.²⁹⁵ Other than exiting the market entirely, developers have the option to leave Steam and list *only* on competing platforms. In my main model, I assume leaving Steam would lower a game's demand.²⁹⁶ This results in single homing on EGS being no better than exiting the market. To show that this is not a critical assumption, I also show a model assuming the publisher would see a large *boost* in demand after leaving Steam.²⁹⁷ This

²⁹² Schwartz Opening Report, 2/8/2024, ¶ A32, Table A.2.

²⁹³ Langer Report, 5/17/2024, ¶ 216.

²⁹⁴ Schwartz Opening Report, 2/8/2024, ¶ 274, Table 3. (Note that Seller economic profits (millions) in the columns under "With PMFN", the seller profits are [REDACTED] = 0.)

Recall again that economic profits are not the same as accounting profits. Zero economic profits reflect no incentive for firms to exit or enter the market and typically correspond to positive profits in a company's books and records. See:

Varian, Hal R. (2014), *Intermediate Microeconomics: A Modern Approach*, 9th ed., New York: W.W. Norton & Company, at 434. (Because economic profits include opportunity cost, and additional cost, they are typically lower than accounting profits, which do not include opportunity costs.)

²⁹⁵ Schwartz Opening Report, 2/8/2024, ¶ A32, Table A.2. (In this robustness check, publisher, or seller, profits on Steam with the PMFN in place are [REDACTED]. Even with these large positive profits, the fee on Steam falls from [REDACTED].)

²⁹⁶ Schwartz Opening Report, 2/8/2024, ¶ A34,

²⁹⁷ Schwartz Opening Report, 2/8/2024, ¶ A32, Table A.2.

assumption leads to a profitable outside option for publishers (single homing on EGS) and forces Steam to set a price such that publishers have *positive* economic profits on Steam and EGS. Appendix Table A.2 shows that, despite developers earning positive economic profits on both platforms, developers are still harmed by the PMFN.²⁹⁸ So, while publishers earning zero total economic profits (and negative profits on Steam) is economically justified, it is not a *critical* assumption.

My solution is an equilibrium

(136) Dr. Langer incorrectly claims that I did not show that the numeric solution to my PCM is an equilibrium.²⁹⁹ Dr. Langer claims that:³⁰⁰

[I have] not prove[n] that such changes in [my] assumptions are consistent with the optimal rules of behavior and choices of the economic agents in [my] PCM that imply optimal economic outcomes for them (e.g., obtaining maximum profits for the publisher and the platforms such that they cannot take any alternative action to increase their profits). Specifically, [I have] not shown that EGS will continue to follow the same pricing strategy as in the Boik and Corts model when [I limit] Steam’s pricing options.

(137) Again, Dr. Langer is incorrect. Each of these actors is maximizing its profits and behaving optimally, as shown in my Opening Report. Neither platforms nor the publisher can take any unilateral alternative action to increase their profits.

(138) First, Valve is maximizing its profits, as I explain above. For fees below its optimal fee, Valve would receive lower profits on Steam’s operations. For fees above Valve’s optimal fee, publishers would exit the market, and Steam’s profits would be zero. Thus, the optimal fee for Valve is the highest fee such that the seller remains in the market and on the Steam platform. This is exactly the fee where sellers are indifferent between remaining on Steam and exiting the market entirely.

(139) The competing platform is also maximizing its profits and behaving optimally, which can be modeled using a function called a “best response function.”³⁰¹ Dr. Langer agrees that using a

²⁹⁸ Schwartz Opening Report, 2/8/2024, ¶ A32, Table A.2. (In this robustness check, publisher, or seller, profits on steam with the PMFN in place are [REDACTED]. Even with these large positive profits, the fee on Steam falls from [REDACTED].)

²⁹⁹ Ashley Langer, Dep. Tr., 6/21/2024, at 158:20–159:8. (“... I am not arguing that Dr. Schwartz’s solution is not an equilibrium. I’m arguing he has not shown that it is an equilibrium...”)

³⁰⁰ Langer Report, 5/17/2024, ¶ 180.

³⁰¹ Mas-Colell, Andreu, Michael D. Whinston, and Jerry R. Green (1995), *Microeconomic Theory*, 1st ed., New York, NY: Oxford University Press, at 242.

best response function is a sufficient way to show a firm is behaving optimally.³⁰² In my Opening Report, I calculate the best response function for the competitor platform and use it to derive their choice of platform fee.³⁰³ This ensures that the developer is maximizing its profits.³⁰⁴

- (140) Finally, the sellers (here, publishers) are pricing their products (here, games) optimally. The functions derived in Boik and Corts for sellers give the *optimal* prices as a function of the platform fees and demand function parameters.³⁰⁵ This function tells us the optimal platform game prices for any set of demand parameters and platform fees.³⁰⁶ I use the same demand equations and so this problem, and, by extension the solution, has not changed. Moreover, this solution is the optimal choice for sellers for any platform fee (provided the seller would not exit the market) no matter how platforms come to their decision on fees. These functions describe the seller’s best choice given the choices of the other actors. Dr. Langer’s incorrect claim, presented without evidence, that these actors are not behaving optimally, demonstrates a fundamental misunderstanding of my Opening Report.

6.2.2. The demand disadvantage is not a critical assumption

- (141) Despite its suitability and reliability for the task at hand, Dr. Langer believes that the “persistent ‘demand disadvantage’ parameter is one (among many) ways in which Dr. Schwartz’s PCM deviates from the video game industry it purports to model.”³⁰⁷ She is incorrect. The demand disadvantage in my model appropriately accounts for differences in platform characteristics. See Section 8.1. The demand disadvantage input is directly observable from the market shares when the PMFN is in place (as is the case in the real-

³⁰² Interestingly, Dr. Langer explicitly references my use of a best response function shortly before claiming that EGS is not responding with its best choice. Dr. Langer says “Dr. Schwartz has not proved that such changes in his assumptions are consistent with the optimal rules of behavior and choices of the economic agents” after quoting the section of my Opening Report that calculates the best response function in the prior footnote. See:

Langer Report, 5/17/2024, fns. 278, 279.

Langer Report, 5/17/2024, ¶ 180.

³⁰³ Schwartz Opening Report, 2/8/2024, ¶ A30.

³⁰⁴ Dr. Langer’s testimony supports this using a best response function to determine if an outcome is an equilibrium. See:

Ashley Langer, Dep. Tr., 6/21/2024, at 158:20–159:8.

³⁰⁵ Boik, Andre, and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 133.

³⁰⁶ Boik, Andre, and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 112, 133.

³⁰⁷ Langer Report, 5/17/2024, ¶ 183.

world), making it an effective and fact-driven method for accounting for differences in platform characteristics. Further, this criticism is irrelevant to the fact of class-wide harm. Dr. Langer incorrectly claims that this is a “critical assumption” for my conclusion,³⁰⁸ but both my Opening Report and the Boik and Corts paper show it is not.³⁰⁹

Harm to publishers is not dependent on entry deterrence

- (142) A key error in Dr. Langer’s assessment of the PCM comes from her conflation of platform entry with harm to developers. Dr. Langer and I each point out that in some cases a small demand disadvantage can lead a PMFN to encourage platform entry.³¹⁰ Dr. Langer implies that this means PMFNs are beneficial to publishers. This is not true. In this hypothetical case, the PMFN encourages entry *because* average platform fees increase. Other platforms with similar demand functions to Steam, but higher costs, may be encouraged to enter by the presence of a PMFN precisely *because* the PMFN allows them to extract more profits from developers through higher fees. The supracompetitive price charged by Steam provides these prospective entrants with an umbrella that allows those higher platform fees and prices to persist. Essentially, Steam and the rival share profits above the competitive rate, an outcome that is plainly bad for publishers and consumers.³¹¹
- (143) The hypothetical entrant in this scenario cannot survive price competition but will be able to make a profit in the anticompetitive environment created by Steam’s PMFN where platforms are prevented from competing on price and platform fees are artificially high. Even if the PMFN encouraged entry, which the evidence does not support, this would *not* eliminate the harm to developers. In fact, the PMFN encouraging entry is *predicated* on harm to developers because the entry is the *result* of higher platform fees and profits. By arguing that the PMFN encourages entry, *Dr. Langer is arguing the PMFN increases platform fees and causes harm to*

³⁰⁸ Langer Report, 5/17/2024, ¶ 183.

³⁰⁹ Boik, Andre, and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 114. (“There exists a unique symmetric equilibrium in transaction fees if no platforms have PMFN agreements or if both platforms have PMFN agreements. Equilibrium fees and prices are higher when both platforms have PMFN agreements.”)

³¹⁰ Schwartz Opening Report, 2/8/2024, ¶ 268.

Langer Report, 5/17/2024, ¶ 183. (“Choosing more realistic parameter values would only have led Dr. Schwartz’s PCM to the conclusion that the alleged PMFN does not deter entry.”)

³¹¹ Boik, Andre, and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 115. (“Thus, PMFN agreements transform this from a game of strategic substitutes with platform fees that are lower than a monopolist would set to a game of strategic complements with platform fees that are higher than a monopolist would set.”)

publishers. I specifically discussed the possibility of the PMFN encouraging entry in order to explain why this entry does not relieve the harm to publishers. Rather, the PMFN increases fees for all possible demand disadvantage values regardless of platform entry.³¹²

- (144) While developers are still harmed in this other hypothetical scenario, it is important to point out that this potential scenario does not reflect the facts of the case. For a platform to enter and share in the inflated platform profits the PMFN provides to Valve, the entrant would need to be able to attract consumers and publishers at equal prices to Steam (which is enforced by the PMFN). No platform has had significant success at this in the real world. Dr. Langer could not name a single successful game launched since 2021 that did not launch on either Steam or EGS, and EGS has a significantly lower commission than Steam (EGS is not benefiting from the PMFN but entered in spite of it).³¹³ Moreover, the PMFN encouraging entry does not fit with Dr. Langer’s statements regarding the importance of network effects. In order to get to a point where a platform is able to draw consumers and publishers at equal prices, that platform would need to build a critical mass of users and publishers. The most viable path towards this end goal for a platform is with an initial period of lower fees and prices while building its network. This competitive strategy is foreclosed by Valve’s PMFN.

A demand disadvantage is not a critical assumption to showing harm

- (145) The demand disadvantage is not critical to show harm to publishers. Boik and Corts show this through their symmetric model, where the demand disadvantage is zero. In the symmetric model, Boik and Corts conclude, unequivocally, that “[e]quilibrium fees and prices are higher when both platforms have PMFN agreements.”³¹⁴ I include a demand disadvantage in the PCM to better fit the facts of the case, giving Valve the advantage for being a first mover and original innovator in the market. My discussion of how the PMFN could impact entry was only to avoid confusion and clarify that entry is indeed irrelevant to the fact of harm. However, Dr. Langer misses the fact that the demand disadvantage is *not required* to show harm to publishers. Despite taking pains to avoid affirmative opinions (see Section 1.3), Dr. Langer was comfortable affirmatively and incorrectly claiming the demand disadvantage is a critical assumption.³¹⁵

³¹² Schwartz Opening Report, 2/8/2024, ¶ 268.

³¹³ Ashley Langer, Dep. Tr., 6/21/2024, at 43:18–47:5.

³¹⁴ Boik, Andre, and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 114.

³¹⁵ Langer Report, 5/17/2024, ¶ 183.

6.2.3. PCM conservatively handles network effects

- (146) Dr. Langer incorrectly claims that my PCM does not “include network effects, and thus cannot be used to model two-sided platforms like those in the video game industry.”³¹⁶ Dr. Langer is wrong. Not only does the PCM account for network effects, it does so in a conservative way, that is, in a manner that is advantageous to Valve. Dr. Langer makes this claim despite recognizing explicitly that the demand disadvantage accounts for network effects. She states that “[i]n the presence of network effects, an entrant platform could increase its market share and simultaneously lower its ‘demand disadvantage’ after its entry in the video game industry.”³¹⁷ Her critique recognizes that the demand disadvantage *does* account for network effects but suggests that I should adjust the demand disadvantage in the no-PMFN scenario to reflect a change in the advantage attributable to network effects. As I explained in Section 8.1.2, the PCM is not modeling a complete but-for scenario and so making this adjustment would be inconsistent with my stated goal. Despite this, I show below that incorporating this suggestion would only increase the harm to developers, further supporting my conclusion.
- (147) Dr. Langer’s criticism does not follow the intuition of the model and case facts. Including a demand disadvantage for the competing firm means I am assuming Steam will generally attract more users, perhaps through its features, network effects, or some combination. This assumption benefits Valve. By using real world data to determine the demand disadvantage faced by the competing platform I am incorporating Steam’s advantage, gained from years of PMFN enforcement, into the calibration of my model. As such, the model reflects a short-term change or removal of the PMFN where Steam is able to keep or maintain the demand advantage it has gained over the years. If that demand advantage erodes, there will be increased competition from rival platforms further driving down platform fees and prices.

Network effects are included in the demand disadvantage

- (148) In my Opening Report, I explain that “direct” or “same-side” network effects exist if, as more users join a platform, the value of that platform increases to all users on that same side of the platform.³¹⁸ “Indirect” or “cross-side” network effects exist if, as more users of a *different* group

³¹⁶ Langer Report, 5/17/2024, ¶ 177.

³¹⁷ Langer Report, 5/17/2024, ¶ 191.

³¹⁸ Schwartz Opening Report, 2/8/2024, ¶ 30.

Farrell, Joseph and Paul Klempner (2007), “Coordination and Lock-in: Competition with Switching Costs and Network Effects,” in M. Armstrong and R. Porter, eds., *Handbook of Industrial Organization, Volume 3*, Elsevier B.V., at 1974. (“A good exhibits direct network effects if adoption by different users is complementary, so that each user’s adoption payoff, and

join a platform, the value of the platform increases to the first group of users.³¹⁹ These effects would lead users to prefer Steam over other platforms, because Steam has a large user and developer base. That is, Steam would experience higher demand than platforms with comparable features because of its large network on both sides of the platform. This higher demand, or demand advantage, is directly accounted for in the demand disadvantage the competing platform faces relative to Steam in the PCM. Thus, network effects are accounted for along with other differences in platform features that may lead more consumers to prefer Steam over competing platforms even at comparable prices (as discussed in Section 8.1).

Allowing network effects to adjust in the “no PMFN” scenario would only increase the harm to publishers

- (149) The demand disadvantage accounts for network effects in the real world. However, Dr. Langer argues that in the no-PMFN scenario, other firms could increase their market share, and by extension their network, and lower their demand disadvantage in the but-for world.³²⁰ Precisely accounting for this change would be difficult, but by showing the impact of a range of adjustments in the model, I demonstrate that incorporating this effect would only increase the harm to developers. Intuitively, increasing competition in the but-for world by lowering the advantage Valve has over its competitors would only increase price competition and lower but-for commission rates. I show in the table below the result of a model where the demand disadvantage shrinks in the no-PMFN scenario.

his incentive to adopt, increases as more others adopt. Thus users of a communications network or speakers of a language gain directly when others adopt it, because they have more opportunities for (beneficial) interactions with peers.”)

³¹⁹ Schwartz Opening Report, 2/8/2024, ¶ 30.

Parker, Geoffrey G., Marshall W. Van Alstyne, and Sangeet Paul Choudary (2016), *Platform Revolution*, New York, NY: W. W. Norton & Company, at 29. (“... cross-side effects are network effects created by the impact of users from one side of the market on users from the other side of the market.”)

A canonical example is the Yellow Pages directory, which exhibits network effects as its value depends on the number of consumers using it. Consumers value the Yellow Pages more highly when they contain greater amounts of information and advertising, while retailers increase advertising in the Yellow Pages when there are greater numbers of consumers. See:

Rysman, Marc (2002), “Competition Between Networks: A Study of the Market for Yellow Pages,” *Boston University Industry Studies Project Working Paper #104*, 1–43, at 1–2.

³²⁰ Langer Report, 5/17/2024, ¶178. (Dr. Langer argues that “The fact that his model’s assumptions do not allow the ‘demand disadvantage’ to change with the market share of the competing platform after its entry is inconsistent with the facts of the industry, his own analysis, and academic literature”. The market share of the competing platform would grow with the removal of the PMFN. Network effects would suggest that, over the long term, the demand disadvantage faced by the competing platform would fall. That is, the competing platform would become more competitive with Steam. Thus, the competing firm’s demand disadvantage, X, would be lowered in the no-PMFN scenario. As I show below, increasing the competitiveness of the competing platform when the PMFN is removed only acts to drive Steam’s fees down more.)

(150) To illustrate the conservative nature of not adjusting the X value, the figure below shows one set of possible adjustments that could be made. To reflect Dr. Langer’s suggestion, I ran five models where I adjust the demand disadvantage in the no-PMFN world to be equal to 100%, 75%, 50%, 25% and 0% of the value when the PMFN is in place. Because changing X shifts the overall demand level, I must also adjust the intercept value of both demand functions so that total demand across both platforms is unchanged. Specifically, adjusting the demand equations for the PCM as described in my Opening Report,³²¹ I set demand to the following in the no-PMFN scenario, where ΔX is the difference in X between the PMFN scenario and no-PMFN scenario:³²²

$$q_1^0(P) = a - \Delta X/2 - bp_1 + dp_2$$

$$q_2^0(P) = a + \Delta X/2 - X - bp_2 + dp_1$$

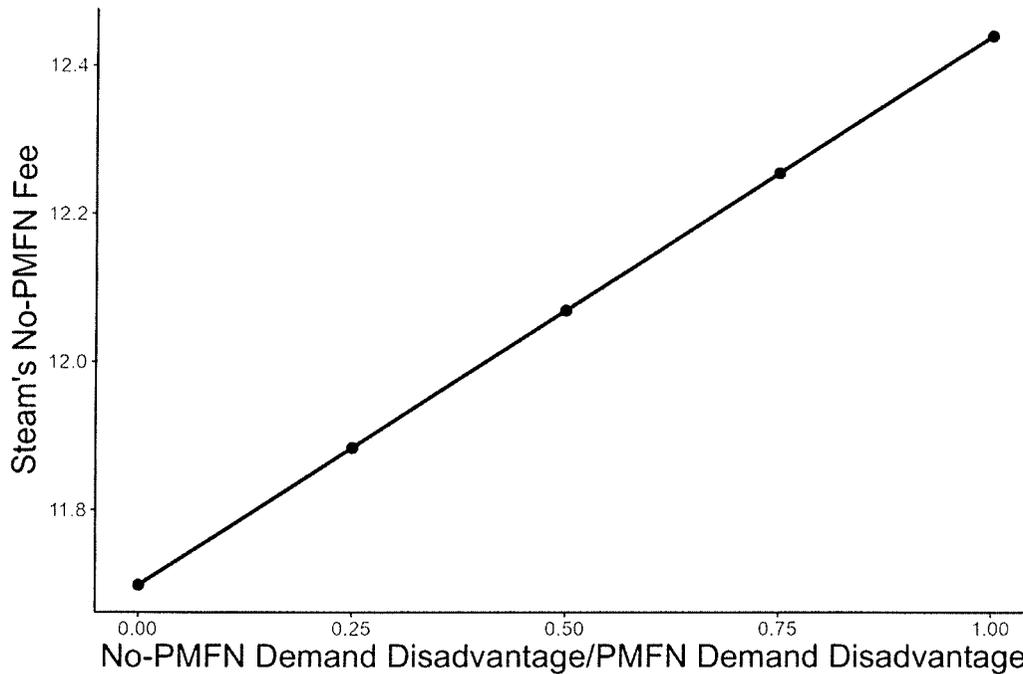
(151) I find that the lower the demand disadvantage is in the no-PMFN scenario, the lower Steam’s but-for fee is (and the larger the harm to publishers would be). This can be seen in Figure 4 below.³²³ A value of one on the horizontal axis represents my Opening Report results, and moving towards zero represents shrinking the no-PMFN demand disadvantage as Dr. Langer suggested. Thus, incorporating Dr. Langer’s opinion would increase harm.

³²¹ Schwartz Opening Report, 2/8/2024, ¶ 252.

³²² Note that demand in the PMFN scenario is the same as in my Opening Report. Also note that $q_2^0(P) = a - \Delta X/2 - (X - \Delta X) - bp_2 + dp_1 = a + \Delta X/2 - X - bp_2 + dp_1$. This alteration gives a total intercept (combined across both platforms) of $2a - X$, the same as the original demand equations. However, the difference between the two intercepts (and so the demand disadvantage) is now $X - \Delta X$ rather than X . This can be seen by comparing the above demand equations to the original demand equations used in my Opening Report (which are still used for the PMFN scenario). See Schwartz Opening Report, 2/8/2024, ¶ 252.

³²³ 01_BC_changing_x_network_effects.R

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Figure 4: Adjusting Demand Disadvantage

(152) In a similar critique, Dr. Langer says the PCM model “does not allow for platforms to use growth strategies that develop over time[.]”³²⁴ The result of including these strategies would be the same as in Figure 4 above.³²⁵ That is, the demand disadvantage would shrink in the but-for world. I agree that platforms may implement these strategies. Dr. Langer’s argument further supports my estimate is a conservative estimate of the harm to developers.

6.2.4. The “error” identified by Dr. Langer is not an error

(153) Dr. Langer claims to have found an error in (or issue with) my numeric calculation.³²⁶ While she concedes that the supposed error is immaterial,³²⁷ to call it an error at all is a mischaracterization, at best, and a mistake, at most. The difference in our results is a matter

³²⁴ Langer Report, 5/17/2024, ¶ 177.

³²⁵ See: “01_BC_changing_x_network_effects.R”.

³²⁶ Ashley Langer, Dep. Tr., 6/21/2024, at 129:11–131:11.

³²⁷ Ashley Langer, Dep. Tr., 6/21/2024, at 130:13–22. (“Q. Okay. When you say first-order contribution, are -- are you essentially saying it’s a minor issue? A. The -- yes. It is -- the issues that is I am raising with Dr. Schwartz’s PCM that are in my main -- that are in my main report are important. I think that the -- even if you use the minimum that I found, everything still holds, all of my concerns with the model still hold. So it doesn’t change any of those concerns. It’s just a problem with how it was implemented.”)

of numeric precision. Numeric estimation can always be made more precise. The objective of my numeric PCM analysis is to show an example set of model parameters that produce model outputs for the PMFN scenario that match the real-world fees and quantities relative to a normalized the game price. As shown in Table 2 below, we can see the output values produced by my results and those produced by Dr. Langer's. My results match Steam's fee more closely while Dr. Langer's is slightly closer on the remaining dimensions. It is correct that her result gives a lower value to the objective function I minimized (the sum of the squared difference between the estimated and real values). These differences are inconsequential to the end conclusion. From an economic perspective, these differences are quantitatively trivial. Both fit the facts of the case to a reasonable level of precision. Her comment is inconsequential.

Table 2: Results Comparison³²⁸

Variable	Variable Description	My Fitted Values	Langer Fitted Values	Real World Value	Langer Estimate Advantage
f12	Steam's Fee	██████████	██████████	██████████	(0.0000237202)
f22	EGS's fee	██████████	██████████	██████████	0.0000038491
pi2	Normalized Price	██████████	██████████	██████████	0.0000163847
q12	Steam Market Share	██████████	██████████	██████████	0.0000071502
q22	EGS Market Share	██████████	██████████	██████████	0.0000071502

6.2.5. Other assumptions

High constant publisher marginal costs are a reasonable simplification

(154) Dr. Langer critiques the numeric analysis of the PCM for having high publisher costs. First, this is only a critique of the numeric analysis. While the numeric analysis is demonstrative of the harm done to publishers, the fact of harm is established by the evidence presented in Section 7.2.1 of my Opening Report.³²⁹ Second, I make a reasonable simplifying assumption that publishers face constant average and marginal costs. In light of this assumption, economic costs that are high are a reflection of the competitive nature of video game publishing. These high costs lead to zero economic profits for publishers in my main specification (and moderate profits in an alternative specification shown in appendix Table

³²⁸ See: 02_BC_check_langer_values.R.

³²⁹ Schwartz Opening Report, 2/8/2024, § 7.2.1.

A.2). There are many developers entering the market and the PMFN limits price competition and allows Steam to extract more profits from developers. Given these facts, it is unlikely that publishers could maintain large economic profits for a prolonged period of time without encouraging additional entry (and competition reducing those economic profits) or higher fees from Steam. Dr. Langer provides no explanation or affirmative opinion as to why changing this assumption would change my conclusion that the PMFN caused harm to publishers. It would, however, increase the complexity of the model.

Simplifying to two platforms is reasonable

- (155) Dr. Langer criticizes the PCM for including only two platforms. However, Dr. Langer could not name a single game launched in the past three years that did not sell on EGS or Steam.³³⁰ Dr. Langer not only provides no evidence, she provides no affirmative opinion as to why, even theoretically, including more platforms would change the conclusion that the PMFN harms publishers.

Simplifying to one game and one seller is reasonable and does not drive the result

- (156) Dr. Langer asserts that each game’s specific demand curve parameters must be known to estimate class-wide harm.³³¹ That is incorrect, as a matter of economics. Valve has a standard pricing structure that applies equally to virtually all games and publishers,³³² and so using aggregate demand is an appropriate way to find the overall fees set for games. Dr. Langer mentions that different games may substitute away from Steam at different rates,³³³ but I do not need to measure these individual substitutions to evaluate *harm*. The PCM shows that Steam’s fee would decrease absent the PCM. Any sales remaining on Steam would benefit from that fee reduction and so are being harmed by the PMFN. Any competing platforms in the no-PMFN scenario would have a lower fee than Steam. If there were a platform that could sustain a higher fee than Steam, the PMFN would not deter their entry. Since we do not see any such competitors in the real-world PMFN scenario, none would exist in the no-PMFN

³³⁰ Ashley Langer, Dep. Tr., 6/21/2024, at 43:18–47:5.

³³¹ Langer Report, 5/17/2024, ¶ 202. (“Despite these differences, by only including a single game in his PCM, Dr. Schwartz does not allow for even the possibility that games like *Need for Speed* and *Night In the Woods* could have different price sensitivities. By failing to allow for games to have different parameter values in consumers’ demand, Dr. Schwartz assumes a one-size-fits-all approach to a complex industry, and his model is thus unable to demonstrate injury on a class-wide basis.”)

³³² As I explained in my Opening Report, cases with [REDACTED] are impacted by a change in the standard rates. See Schwartz Opening Report, 2/8/2024, § 7.5.1.

³³³ Langer Report, 5/17/2024, ¶ 202.

scenario. Moreover, sales successfully transferred to those platforms would benefit even more than sales remaining on Steam. Any publishers that shift sales to other platforms are doing so voluntarily and in order to increase their profits relative to staying on Steam.

Assuming the platform demand curves have the same slope does not drive the result

- (157) Dr. Langer criticizes the Boik and Corts paper’s assumption, which I adopt, that the slope of demand on the two platforms is equal.³³⁴ Dr. Langer’s criticism misrepresents my work and the work of professors Boik and Corts. Dr. Langer gives an example of two differently priced games and argues that the different prices are evidence of different demand responsiveness.³³⁵ First, as I’m sure Dr. Langer knows, more expensive items are not necessarily any more or less responsive to price changes than less expensive items.³³⁶ Second, the example uses two different games to critique a model using one representative game. The demand for games in the PCM model is a normalized demand meant to represent demand for all games on each platform (or a representative game). Both of the games in Dr. Langer’s example, *Need For Speed Unbound* and *Night in The Woods*, are available on Steam and EGS. This fact supports using the same overall demand on both platforms, making Dr. Langer’s complaint invalid.³³⁷ Finally, Dr. Langer does nothing to show a specific alternative approach that would better fit the facts of the case let alone lead to any conclusion other than harm to developers.

Assuming Steam charges a piece rate fee rather than a percent fee is a reasonable simplification

- (158) Dr. Langer criticizes my use of a piece-rate fee rather than a fee as a percentage of the price in the PCM model. Boik and Corts acknowledge this simplification in their published paper, and state that it should not change their conclusions, saying:³³⁸

³³⁴ Langer Report, 5/17/2024, ¶¶ 196–202.

³³⁵ Langer Report, 5/17/2024, ¶ 199.

³³⁶ Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 90–91.

³³⁷ Epic Games Store Website, *Night in the Woods*, <https://store.epicgames.com/en-US/p/night-in-the-woods> (accessed 7/5/2024).

Epic Games Store Website, *Need for Speed Unbound*, <https://store.epicgames.com/en-US/p/need-for-speed-unbound> (accessed 7/5/2024).

Steam Website, *Need for Speed Unbound*, https://store.steampowered.com/app/1846380/Need_for_Speed_Unbound/ (accessed 7/5/2024).

Steam Website, *Night in the Woods*, https://store.steampowered.com/app/481510/Night_in_the_Woods/ (accessed 7/5/2024).

³³⁸ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 110.

In many applications, platforms charge a commission proportional to retail price rather than a fixed per-unit fee. We expect that our qualitative results will apply to both types of fees. In general, in these kinds of models, a proportional commission has the effect of raising the seller’s perceived marginal cost (Johnson 2013) because of the divergence between the taxed revenue and the maximized profit, whereas in our model the fixed per-unit fee directly raises that marginal cost.

- (159) In contrast to Professor Boik and Corts’ assertions that this assumption does not drive the result, Dr. Langer provides no explanation for how or why implementing this change would eliminate the harm to publishers. I expect, however, Dr. Langer is very aware that making this change significantly complicates the math and analysis in the model.

7. Claimed Individual Factors Do Not Preclude Class-Wide Harm

- (160) Dr. Chiou claims that “Plaintiffs and their experts’ methodologies cannot establish class-wide antitrust impact on proposed class members using common proof” because “individualized inquiry would be required.”³³⁹ Specifically, in addition to critiques that I respond to in Sections 3.2 and 3.3, Dr. Chiou claims that I have not shown common antitrust injury because (1) publishers differ in the benefits they derive from Steam’s features,³⁴⁰ (2) publishers differ in their use of alternative platforms,³⁴¹ and (3) publishers differ in their use of Steam Keys.³⁴² Even if true, these factors are not relevant to the common antitrust injury caused by the PMFN Policy or the ability to prove class-wide injury with common evidence.
- (161) When a class member pays a higher commission rate in the real world relative to the but-for world, the class member is injured. This fundamental fact holds true regardless of any individualized factors that Dr. Chiou claims to identify. Even as to damages—*i.e.*, the quantum/degree of injury rather than the fact of injury—the sorts of individualized inquiries that Dr. Chiou asserts are important are, in fact, neither necessary nor important. Valve imposes a standard pricing structure on all publishers on Steam through its SDA Agreement.³⁴³ Given Valve’s imposition of a standard pricing structure, injury to all, or virtually all, class members can be established because the evidence and analysis in my Opening Report demonstrates that Valve’s commission rate would decrease in a but-for world absent Valve’s PMFN.³⁴⁴
- (162) Dr. Chiou also misses the point that Valve’s behavior has substantially reduced the choices and options available to developers and consumers. A class member that derives value from using Steam and/or enjoys the functionality available on Steam more than from the

³³⁹ Chiou Report, 5/17/2024, ¶ 18.

³⁴⁰ Chiou Report, 5/17/2024, ¶ 18.d.

³⁴¹ Chiou Report, 5/17/2024, ¶ 18.e.

³⁴² Chiou Report, 5/17/2024, ¶ 18.c.

³⁴³ Schwartz Opening Report, 2/8/2024, ¶ 242. (“Valve sets its pricing structure (most recently a tiered commission rate) in its SDA Agreement, which applies to all publishers on Steam.”)

³⁴⁴ Schwartz Opening Report, 2/8/2024, ¶ 242. (“Given Valve’s imposition of a standard pricing structure for publishers, if the PMFN policy is eliminated, the default commission rate would fall and that would benefit each publisher. Each publisher would only pay the new, lower, default commission rate. Thus, all, or virtually all, class members were injured provided that an economic analysis shows Valve’s commission rates would decrease in a world free of Valve’s PMFN Policy.”)

alternatives in the but-for world *will still be able to use Steam in the but-for world*. However, in the but-for world, that class member would have other (perhaps more) meaningful options available to them.³⁴⁵ Valve’s conduct took these options off the table by effectively eliminating choice (and the resulting competition on the merits) altogether. By giving class members more choice, all class members are better off.

7.1. Varied use of Steam features does not preclude class-wide harm

(163) Dr. Chiou opines that “[p]ublishers vary in the benefits they derive from Steam features and would not be impacted in a common fashion (if at all) by the alleged conduct.”³⁴⁶ I do not dispute for present purposes that there are differences in the level of benefits that each publisher receives from features on Steam. However, this does not mean that publishers who derive either more or less benefit from various features on Steam are all unharmed. Valve’s PMFN Policy allows it to quash meaningful competition and to maintain supracompetitive rates. Thus, all publishers distributing games on Steam are affected negatively by the overcharge resulting from the common supracompetitive commission rate that Valve charges. That harm occurs regardless of publishers’ varying use of Steam features or the value different publishers attach to the various features.

7.1.1. Dr. Chiou’s analysis of Valve’s features compared to real-world platforms is irrelevant

(164) As described in Section 6.3 of my Opening Report, Valve’s anticompetitive PMFN Policy has led to a reduction in the variety and quality of platforms available to users and game developers. In Sections 6.3.1 and 6.3.2 of my Opening Report, I document undesired Steam features, features that Steam lacks, and a decline in Steam’s innovation. Both publishers and users have expressed unhappiness with Steam’s quality as a platform and would benefit from more choices of digital PC game platforms.³⁴⁷

³⁴⁵ Lesley Chiou, Dep. Tr., 6/18/2024, at 157:18–159:4, 240:15–25, 243:25–244:14, 245:16–246:9.

For example, there could be lower cost “no frills” platforms that charge hardly any commission whatsoever, or there could be premium higher-commission concierge platforms that have even more features than Steam.

³⁴⁶ Chiou Report, 5/17/2024, § 5.2.

³⁴⁷ Schwartz Opening Report, 2/8/2024, § 6.3.

- (165) In the but-for world, in which developers’ pricing and content offerings on rival platforms are not dictated by Valve’s PMFN Policy, alternative third-party digital PC game platforms would be able to compete and succeed in the market.³⁴⁸ Users and developers would have more choices of alternative high-quality/high-feature (or low-quality/low-feature) platforms, and Valve would have a greater incentive to innovate to compete with these alternative platforms.³⁴⁹ Dr. Chiou testified that, in the past, Valve has responded to the entry of new platforms and outbreaks of competition by increasing innovation and adding new features to Steam.³⁵⁰ Accepting this as true for present purposes, the same would be true to an even greater degree in the but-for world. Valve would need to tailor the quality of Steam and offer features that publishers/users desire in order to compete with other platforms in the market that provide developers and consumers with a range of choices/options/features.³⁵¹ Overall, it is highly likely that this would lead to *more* innovation in the market, as well as the entry of platforms with alternative offerings that the entering platforms believe are valuable to users and publishers. The outcome of this competitive activity is that both sides of the market—publishers and users—will benefit and be better off.³⁵² It defies economic logic and common sense to assume, as Dr. Chiou does, that Steam’s quality would go down in the face of competition.³⁵³
- (166) Dr. Chiou presents an analysis of Steam’s quality and innovation that does not compare the real world and the but-for world. Instead, she focuses solely on Steam’s innovation and comparing the features and quality of Steam and other platforms (including first-party ones) in the *actual* world.³⁵⁴ This is not a relevant or appropriate approach to assessing the impact of Valve’s anticompetitive conduct. The actual world is already poisoned by Valve’s anticompetitive conduct that has adversely impacted platforms’ ability to compete and innovate.³⁵⁵ The economically correct comparison is between the actual and but-for worlds. Such a comparison, when properly completed, shows the *difference* in outcomes when Valve’s anticompetitive behavior is eliminated. Dr. Chiou’s analysis is little more than a laundry list

³⁴⁸ Schwartz Opening Report, 2/8/2024, § 6.3.

³⁴⁹ Schwartz Opening Report, 2/8/2024, § 6.3.

³⁵⁰ Lesley Chiou, Dep. Tr., 6/18/2024, at 236:5–237:7, 237:16–238:17.

³⁵¹ Schwartz Opening Report, 2/8/2024, § 6.3.

³⁵² Schwartz Opening Report, 2/8/2024, § 6.3.

³⁵³ Lesley Chiou, Dep. Tr., 6/18/2024, at 158:12–159:4, 232:16–22.

³⁵⁴ Chiou Report, 5/17/2024, § 5.1.

³⁵⁵ Schwartz Opening Report, 2/8/2024, §§ 5, 6.3.

of things that Valve did. She gave no consideration of the correct question, namely what Valve and other platforms would likely have done absent the anticompetitive conduct. By contrast, in my Opening Report and discussed above, I answer the correct question—in the *but-for world*, would Valve (and other platforms) be pressured by competition to innovate and improve to benefit both sides of the market, that is publishers and users? The answer to that question is yes.

- (167) In addition to examining the incorrect question, in her comparison of platform features, Dr. Chiou selects and categorizes features arbitrarily based on various online articles.³⁵⁶ From an economic methodological perspective, Dr. Chiou’s analysis fails. Dr. Chiou does not specify the scope of her research and review of public articles; she does not identify any reasoned and consistently applied set of decision rules that governed her choices about feature comparison. Dr. Chiou’s analysis is overly narrow as it focuses on individual features and does not consider how overarching features determine the quality of a platform. The existence and quantity of distinct features alone cannot accurately measure platform quality.³⁵⁷ Her methodology does

³⁵⁶ Chiou Report, 5/17/2024, ¶¶ 218–223, 415–416, Exhibit 14. (“From reviewing these articles, I identified four categories of features that were commonly mentioned (social and multiplayer features, compatibility features, discovery and marketing features, and customization features). Within each of these categories, I selected features that appear to be representative of the category for comparison across PC platforms.”; “For a given platform, if I was able to find evidence from public sources of a feature ever being available on the platform, I treated that feature as available in my comparison. Conversely, if I was unable to find evidence of a feature being available on the platform from public sources, I treated that feature as unavailable on the platform in my comparison.”)

³⁵⁷ Chiou Report, 5/17/2024, ¶¶ 218–223, Exhibit 14.

For example, many of the articles that Dr. Chiou relies upon discuss game discoverability issues and user interface problems. See: Chiou Report, 5/17/2024, § 13.2. For examples of articles relied upon by Dr. Chiou that note Steam’s game discoverability issues, see:

PC Gamer, “PC Gaming’s Many Launchers, Reviewed for 2024: Steam Still Puts The Rest to Shame,” 1/30/2024, <https://www.pcgamer.com/pc-gamings-many-launchers-reviewed-for-2024-steam-still-puts-the-rest-to-shame/>. (“Cons: Inescapable gimmicks, discoverability issues[.] . . . The sheer amount of games on the store, including enormous amounts of shovelware, can make discoverability a nightmare and opens the door to crypto-scams and offensive rubbish[.]”)

TechRadar, “Steam Features and Game Development: An Inevitable Symbiosis,” 9/3/2021, <https://www.techradar.com/news/steam-features-and-game-development-an-inevitable-symbiosis>. (“However, lack of discoverability on the platform has become the bane of small developers, especially after the introduction of Steam Direct.”)

PCWorld, “Bethesda.net is Broken: Why Game Makers Who Abandon Steam Need to Get the Basics Right,” 11/30/2018, <https://www.pcworld.com/article/402909/bethesda-net-fallout-76-no-steam.html>. (“It’s not that Steam is perfect. Absolutely not. There are serious issues with [game] discoverability, on the consumer end. And on the developer side, well, there’s that aforementioned 30-percent revenue cut. Now that there’s no curation and most games barely get any attention, it’s hard to justify Valve’s huge chunk.”)

Windows Central, “Steam vs. GOG Galaxy: Which is Better for PC Gamers?,” 5/17/2022, <https://www.windowscentral.com/steam-versus-gog-galaxy-which-better-pc-gamers>. (“Another problem [with Steam] is the store, which has become a confusing mess to navigate thanks to the number of games that are being added. More and more games are being added each year — and that’s a major problem for anyone looking to get past hundreds of listings to find gems.”)

not allow for the consideration of features that are important to publishers and users. Therefore, a separate attempt at comparing platform features based on public sources may, indeed, likely would yield different results.

(168) Further, in her categorization of features, Dr. Chiou makes unsupported (and arguably biased) judgements about the superiority of one platform over another across feature dimensions.³⁵⁸ For example, Dr. Chiou claims that “Steam’s features that are common to its competitors are often of higher quality on Steam. For example, EGS offers user ratings under the User Reviews feature but does not have the functionality for users to leave text reviews.”³⁵⁹ However, a PC Gamer article (that Dr. Chiou relies upon) describes this feature as a *flaw* rather than feature, stating that “too often [user reviewing] becomes an outlet for players’ often outsized grievances against developers via spiteful review bombs.”³⁶⁰ Meanwhile, EGS made a conscious decision about its review system (that Dr. Chiou arbitrarily penalizes) in order to prevent review bombing.³⁶¹ Dr. Chiou ignores this and makes claims in a selective, arbitrary, and thus, meaningless way, rendering her features comparison in Chiou Report Exhibit 14 and associated conclusions unreliable, inconsistent, and subjective.

For examples of articles relied upon by Dr. Chiou that note Steam’s user interfaces issues, see:

TechRadar, “Steam vs GOG vs GreenManGaming: Which is Best for PC Gamers?,” 6/12/2018, <https://www.techradar.com/news/steam-vs-gog-vs-greenmangaming-which-is-best-for-pc-gamers>. (“By modern standards, Steam hasn’t exactly aged gracefully – its [sic] grey, blocky and eats up a ton of system resources for a program that’s supposed to run in the background.”)

PC Gamer, “The Discord Store is a Carefully Curated Shop, But Could Use a Few More Features,” 10/19/2018, <https://www.pcgamer.com/the-discord-store-is-a-carefully-curated-shop-but-could-use-a-few-more-features/>. (“As a storefront, the Discord Store has a cleaner presentation than Steam[.]”)

PCMag, “Steam Review,” 7/12/2023, <https://www.pcmag.com/reviews/steam-for-pc>. (Steam cons: “Busy interface[.]”)

Windows Central, “Steam vs. GOG Galaxy: Which is Better for PC Gamers?,” 5/17/2022, <https://www.windowscentral.com/steam-versus-gog-galaxy-which-better-pc-gamers>. (Steam: “Client is awful old” and “[Steam] Store can be difficult to navigate.”; GOG Galaxy has a “[c]lean, user-friendly client and store.”)

³⁵⁸ Chiou Report, 5/17/2024, ¶ 221, Exhibit 14.

³⁵⁹ Chiou Report, 5/17/2024, ¶ 221.

³⁶⁰ Chiou Report, 5/17/2024, ¶ 222, § 13.2.3.

PC Gamer, “PC Gaming’s Many Launchers, Reviewed for 2024: Steam Still Puts The Rest to Shame,” 1/30/2024, <https://www.pcgamer.com/pc-gamings-many-launchers-reviewed-for-2024-steam-still-puts-the-rest-to-shame/>.

³⁶¹ Epic, “The Epic Games Store ‘Ratings and Polls’ Update,” 6/17/2022, <https://store.epicgames.com/en-US/news/the-epic-games-store-ratings-and-polls-update>. (For example, Epic initially did not allow users to publicly review games. However, in 2022, Epic introduced a user review system that intended to “protect[] games from review bombing and ensure[] people assigning scores are actual players of the games.”)

(169) An additional serious flaw is that Dr. Chiou does not address how any *undesirable* features of Steam would affect, offset, or be considered in any way as part of her quality-adjusted conclusions.³⁶² Thus, Dr. Chiou’s conclusions imply that an increase in platform features necessarily translates to an increase in quality. As an economic theoretical proposition, there is no support for that conclusion.

7.1.2. Dr. Chiou’s analysis of quality-adjusted revenue share is arbitrary and unquantifiable

(170) Dr. Chiou also relies on her analysis and comparison of Steam’s quality in the actual world to claim that Valve’s revenue share is lower if adjusted for Steam’s higher quality relative to other platforms in the real world.³⁶³ She further claims that Steam’s quality-adjusted revenue share in the but-for world would be even lower for some publishers, albeit there would be variation in the quality-adjusted revenue share across publishers in both the actual and but-for worlds.³⁶⁴ Dr. Chiou’s assertion that there is a meaningful metric for a quality-adjusted revenue share is wholly unsupported. First, as explained above, Dr. Chiou’s quality indicia are fundamentally flawed, arbitrary, and meaningless. Additionally, a quality-adjusted revenue share would have to be a quantifiable metric to be meaningful in this context. Dr. Chiou does not actually calculate such a share for Valve/Steam or any other competitor/platform.³⁶⁵ Nor does she offer a methodology for such a calculation. She reaches

³⁶² For example, Dr. Chiou includes Valve’s introduction of a user review system as a relevant feature in her Exhibits 13 and 14. Valve employees have acknowledged that Steam’s review system is vulnerable to review bombing, which “is a real problem that is frustrating to consumers and dev[eloper]s alike[.]” Platforms such as EGS have taken steps to avoid such undesirable qualities of platform features. See:

Chiou Report, 5/17/2024, Exhibits 13 and 14.

Valve, Emails Regarding Review and Library, 12/10/2018–12/12/2018 (VALVE_ANT_0052615–622, at VALVE_ANT_0052618).

Valve, Emails Regarding GDC, 1/31/2020–3/3/2020 (VALVE_ANT_0053212–216, at VALVE_ANT_0053213–214).

Epic, “The Epic Games Store ‘Ratings and Polls’ Update,” 6/17/2022, <https://store.epicgames.com/en-US/news/the-epic-games-store-ratings-and-polls-update>. (For example, Epic initially did not allow users to publicly review games. However, in 2022, Epic introduced a user review system that intended to “protect[] games from review bombing and ensure[] people assigning scores are actual players of the games.”)

³⁶³ Chiou Report, 5/17/2024, ¶¶ 199–200.

³⁶⁴ Chiou Report, 5/17/2024, ¶¶ 199–200.

³⁶⁵ Dr. Chiou testified that such a quantification and determination of the impact (if any) on my damage calculations is “outside of the scope of [her] assignment.” See:

Lesley Chiou, Dep. Tr., 6/18/2024, at 270:25–272:5.

her conclusions through a flawed and strictly conceptual qualitative analysis of Steam’s features.³⁶⁶

7.2. Varied use of alternative distribution pathways does not preclude class-wide harm

- (171) Dr. Chiou opines that “publishers’ choices to reallocate sales to other channels affect their alleged antitrust injury and depend on many factors, including whether publishers were already offering their titles on multiple platforms in the actual world” and that “[t]he fact that publishers in the proposed class use a variety of alternative platforms other than Steam underscores the importance of assessing each publisher’s situation to properly determine antitrust injury[.]”³⁶⁷ Dr. Chiou purports to support this claim through evidence that “there is substantial variation in their use of alternative distribution platforms, including their own self-distribution platforms, other PC platforms, and consoles.”³⁶⁸
- (172) Dr. Chiou is wrong. While publishers use a variety of means to distribute video games, that fact is wholly irrelevant to determining class wide harm through common evidence. In fact, Dr. Chiou’s arguments actually *demonstrate* the basis for establishing antitrust injury through common evidence. Dr. Chiou acknowledges and agrees that in the but-for world, “publishers may distribute on more platforms [] than in the actual world.”³⁶⁹ Regardless of where games are currently distributed, games that are sold on the Steam platform are subject to the supracompetitive commission rate and would be harmed by that fact, even if they also sell their games through multiple other channels of distribution.

7.3. Varied Steam Key use does not preclude class-wide harm

- (173) Dr. Chiou further opines that I have failed to consider the impact of Steam Keys on publishers’ commission rates and therefore my calculation of individual publisher’s commission rates as

³⁶⁶ Chiou Report, 5/17/2024, § 5.1.

Dr. Chiou did not value Valve’s innovation using any quantitative metrics. She testified that it was “outside the scope of [her] assignment” to investigate if and how Valve tracks financial costs related to innovation and feature additions. See:

Lesley Chiou, Dep. Tr., 6/18/2024, at 155:22–156:24, 276:24–278:8.

³⁶⁷ Chiou Report, 5/17/2024, ¶ 256.

³⁶⁸ Chiou Report, 5/17/2024, ¶ 259.

³⁶⁹ Chiou Report, 5/17/2024, ¶ 276.

well as Valve’s average commission rate are incorrect.³⁷⁰ She claims that the appropriate measure of Valve’s commission rate is not the rate Valve actually charged publishers, but rather an “effective” commission rate that includes both sales on the Steam platform as well as Steam Key sales, which do not occur on the Steam platform and therefore do not incur Valve’s commission.³⁷¹ Dr. Chiou concludes that without individualized inquiry into publishers’ use of Steam Keys, no method “can establish class-wide antitrust impact with common evidence.”³⁷²

(174) I understand that Dr. Chiou’s claims regarding Steam Keys rely on the concept of netting (*i.e.*, combining financial contracts to achieve a reduced “net” obligation),³⁷³ and thus are not applicable in this matter. However, her claims regarding Steam Keys are also incorrect. Below I show that, similar to the varying use of features and the varying use of alternative distribution pathways, the varying use of Steam Keys does not preclude class-wide harm. Instead, that impact is shown through overpayment on a single transaction. I then show that it is also unlikely that Steam Keys would be unavailable in the but-for world. In a world without the PMFN, where Valve has to compete, Steam Keys become an even more important competitive tool to drive business (developers and gamers) to Steam. Given that, I conclude, as an economic matter, that Steam Keys would remain available in the but-for world. Finally, I demonstrate that—even if one adopts Dr. Chiou’s claims that Steam Keys must be included in an assessment of Valve’s “effective” commission rate—her approximations of that “effective” rate are unreliable.

7.3.1. Inclusion of Steam Keys in the calculation of Valve’s commission rate is unnecessary

(175) Dr. Chiou claims that “it is vital to account for Steam Keys when analyzing revenue share rates charged to a publisher or when comparing Valve’s revenue share to the revenue share

³⁷⁰ Chiou Report, 5/17/2024, ¶ 148.

³⁷¹ Chiou Report, 5/17/2024, ¶ 149. (“Furthermore, I explain that a correct measure of a publisher’s revenue share must account for Steam key sales. A publisher’s *effective* revenue share (*i.e.*, the rate received for all Steam-related sales) is lower after considering Steam key sales; the more a publisher relies on Steam key sales (compared to sales on Steam), the lower its effective revenue share.”) (Emphasis in original.)

³⁷² Chiou Report, 5/17/2024, ¶¶ 153, 192. (“The effect of those adjustments on a publisher’s effective revenue share in the but-for world also requires individualized inquiry. Therefore, Dr. Schwartz does not—and cannot—provide a method that can establish class-wide antitrust impact with common evidence.”)

³⁷³ Investopedia, “Netting: Definition, How it Works, Types, Benefits, and Example,” 6/12/2024, <https://www.investopedia.com/terms/n/netting.asp>.

rates of competing platforms[.]”³⁷⁴ According to Dr. Chiou, Steam Keys must be factored into an analysis of the commission rates Valve charges because “publishers pay no revenue share” on Steam Key sales while Valve “provides the same service through the Steam Platform” and “incurs the same distribution cost[.]”³⁷⁵ I disagree.

- (176) Dr. Chiou’s arguments reflect an apparent misunderstanding about the relevance of Steam Keys to Valve and to publishers. Steam Keys are a *feature* or a *service* that Valve offers publishers; publishers can use Steam Keys to derive additional value and reach audiences that may not be on Steam.³⁷⁶ According to the Steamworks website, “Steam Keys are a free service we provide to developers as a convenient tool to help you sell your game on other stores and at retail[.]”³⁷⁷ Additionally, a Valve document highlighted the value of Steam Keys, stating that Steam Keys are “an extremely valuable service that our partners expect and often rely on, and we should treat it with care[.]”³⁷⁸ Dr. Chiou discusses at length the many features that Steam offers to publishers, including “a variety of tools that allow publishers to reach a wider international audience[.]”³⁷⁹ Steam Keys are another one of these features. That publishers can and do utilize the Steam Keys feature that Valve offers to a varying degree has no impact on the commission rate they pay for games actually sold on the Steam platform, similar to how the use of other features across publishers does not impact the commission rates paid by those publishers.
- (177) Valve’s distribution of Steam Keys is unrelated to the supracompetitive fee that Valve charges publishers for distributing on the Steam platform. There are two distinct transactions at play here: (1) Valve charges publishers a fee to sell games on the Steam platform, whereby each publisher abides by the same commission rate rules and (2) Valve provides publishers with Steam Keys. Dr. Chiou cannot show that the number of Steam Keys distributed to each

³⁷⁴ Chiou Report, 5/17/2024, ¶ 156.

³⁷⁵ Chiou Report, 5/17/2024, ¶ 156. (“Therefore, Steam keys lower a publisher’s effective revenue share rate because publishers pay no revenue share for games sold elsewhere through Steam keys. However, Valve provides the same service through the Steam platform—and incurs the same distribution costs—whether games are redeemed through keys or purchased on Steam. Therefore, it is vital to account for Steam keys when analyzing revenue share rates charged to a publisher or when comparing Valve’s revenue share to the revenue share rates of competing platforms[.]”)

³⁷⁶ Kristian Miller, Dep. Tr., 10/3/2023, at 60:1–6. (“Q. In your view, is one business objective of Steam Keys that Valve will reach customers who are not on Steam? A. In my view, the point of Steam Keys is that developers want them to reach customers who may or may not be on Steam already.”)

³⁷⁷ Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 10/18/2023). (Emphasis added.)

³⁷⁸ Valve, Steam Business: Steam Key Basics, 3/15/2021 (VALVE_ANT_2370744–45 at VALVE_ANT_2370745). (Emphasis added.)

³⁷⁹ Chiou Report, 5/17/2024, ¶ 251.

publisher is in any way related to the commission rate charged to a given publisher; in fact, each publisher is charged the same commission rate on sales within Steam regardless of any Steam Key distribution. Also, this “effective rate” notion championed by Dr. Chiou is her own creation. I am not aware of any evidence—and Dr. Chiou offers none—that Valve or publishers consider any sort of effective revenue share at all, much less one that takes into account Steam Keys.³⁸⁰ Steam Key sales should not be considered a subsidy on Valve’s effective commission rate.

(178) Further, Dr. Chiou claims her calculated effective rates inclusive of Steam Keys (based on her four separate approximations) support her claim that the data available “cannot reliably identify which publishers were impacted.”³⁸¹ However, her calculation of effective rates essentially offset the overcharge paid by a publisher (*i.e.*, harm to that publisher) with the use of Steam Keys. Specifically, Dr. Chiou’s effective rates are weighted averages by publisher based on various assumptions around the use of (1) Steam Keys issued or redeemed and (2) an estimate of the price paid for the Steam Keys by users.³⁸² I understand that regardless of the *net* impact of Valve’s supracompetitive commission rate, a class member suffers antitrust injury if they overpay on just a *single* transaction. What matters is whether each class member paid an inflated commission on at least one Steam transaction, regardless of the number of Steam Key transactions that class member may or may not have executed. That is true as a matter of economics.

(179) As described in Section 3.2 and in my Opening Report, the PMFN Policy has precluded effective competition on the merits among platforms within the relevant market, resulting in a supracompetitive commission rate. Publishers have paid the supracompetitive commission rate on individual transactions on Steam and would have paid a lower commission rate, absent the PMFN. Regardless of the average commission rate purportedly measured by Dr. Chiou, these publishers have been harmed on individual transactions, demonstrating antitrust injury. Dr. Chiou’s flawed analysis is thus irrelevant to a showing of antitrust injury.

³⁸⁰ If Valve considered Steam Keys in the manner its economists claim is relevant in this case, one would expect them to be able to cite a single Valve document analyzing so-called “effective revenue share.” However, neither Dr. Chiou nor Dr. Langer can point to any such evidence. Further, Dr. Langer testified in her deposition that she doesn’t know if Valve uses such effective revenue shares in its analyses.

Ashley Langer, Dep. Tr., 6/21/2024, at 225:20–226:2. (“Q. Okay. Well that’s kind of my – my point is that there’s no evidence in the record that the industry actually uses effective revenue share, correct? A. There are lots of words in my report that the industry may or may not use. I’m an economist. I use economic terms. So that’s not particularly relevant to my forming my opinions. So I don’t know.”)

³⁸¹ Chiou Report, 5/17/2024, ¶ 188, Exhibit 9.

³⁸² Chiou Report, 5/17/2024, ¶ 163, informing effective rates by Approximation in Exhibit 9.

7.3.2. Steam Keys benefit Valve and would continue to do so in the but-for world

- (180) In my Opening Report, I assume that Steam Keys would be issued and utilized in the but-for world in the same manner as in the real world.³⁸³ Dr. Chiou argues that this assumption is flawed, stating that it is “at odds with economic logic, facts in the record, and [my] deposition testimony” and that I do not demonstrate “that these assumptions are satisfied.”³⁸⁴ I disagree and find it noteworthy that Dr. Chiou actually has no opinion about whether Valve’s behavior with respect to Steam Keys would change in the but-for world or whether Valve would stop issuing Steam Keys at all.³⁸⁵ The economic evidence suggests that Steam, operating in a competitive market, would continue to offer Steam Keys.
- (181) Valve has derived and continues to derive substantial benefits from offering Steam Keys, in particular, Steam Keys help drive users (back) to Steam, even if they actually made a purchase off of Steam. By doing that, Steam helps to build/strengthen/sustain network effects and create opportunities to receive future revenues and profits from subsequent in-game or new game purchases that are made. Those benefits create strong incentives for Valve to continue operating its Steam Key program in a market in which it faces even stronger competition. Steam Keys are a means by which Valve can draw customers (back) to the Steam platform if they purchase on another site and provide incentives for developers to remain actively engaged with Steam. For example, a March 2021 internal Valve document entitled “Steam Business: Steam Key Basics” noted that “every Steam key activated by a PC player is a Steam copy of the game that can generate direct and indirect value for our platform.”³⁸⁶ In the but-for world, with increased competition, Valve’s incentives to continue operating a valuable feature such as the Steam Key program would most likely increase, or, at the very least, not change in a meaningful way. In fact, the added competition in the but-for world would incentivize Valve to increase its usage of Steam Keys.

³⁸³ Schwartz Opening Report, 2/8/2024, ¶ 350, fn. 827. (“In the but-for world, I assume that Steam Keys would have been provided and used in the same manner as in the real world and focus my determination of the but-for price solely on those purchases made through Steam and thus subject to the Valve commission charge.”)

³⁸⁴ Chiou Report, 5/17/2024, ¶ 192.

³⁸⁵ Lesley Chiou, Dep. Tr., 6/18/2024, at 189:21–191:23. (“Q. . . . Are you offering an opinion that Valve, for any reason, would stop the Steam key program, stop issuing any and all Steam keys, period, full stop? A. What I’m saying is that this is not a common decision, based upon empirical evidence, among other things, that there are instances, based upon historical events which I describe, in which Valve has refused to grant keys to a particular game, whereas, for others, it will.”)

³⁸⁶ Valve, Steam Business: Steam Key Basics, 3/15/2021 (VALVE_ANT_2370744–45, at VALVE_ANT_2370745).

- (182) Valve began offering Steam Keys since 2004 and, as explained in my Opening Report, the vast majority of publishers offering games on Steam—[REDACTED] by revenue—have utilized Steam Keys.³⁸⁷ Steam Keys produce a variety of benefits for Valve and the Steam platform. First, Steam Keys help Valve reach consumers who may not be on Steam already, giving publishers an even larger user base with which to transact.³⁸⁸ Tom Giardino, a Steam Business Team member, testified that “while some key activations might come from someone who already has a Steam account and owns games on Steam, others might be a brand new customer.”³⁸⁹ As far back as 2012, Valve employees discussed the ways in which Steam Keys would drive users to the Steam platform, stating that “every game sold [as a Steam Key through [REDACTED]] is potentially a new Steam installation for us.”³⁹⁰ Valve employees additionally stated that the use of Steam Keys “brings / keeps customers to / on Steam.”³⁹¹ Additional customers for Valve leads to increased revenues and profits from purchases on its platform.
- (183) Valve further benefits from its Steam Key program through on-Steam sales that result from Steam Keys being offered on other stores. Increased consumer interest in a game from Valve’s Steam Key program can be generated by either marketing efforts of the store offering Steam Keys or through an increase in the game’s active player base. Additionally, a game’s mere presence on a store offering Steam Keys may provide that game with visibility that it does not receive on Steam.³⁹² As discussed in my Opening Report, Valve employees are aware of the impact Steam Keys have on what consumers see and ultimately purchase and that publishers are often frustrated with the exposure their games are receiving on Steam.³⁹³ As such, visibility is a key factor in a game’s success on Steam, and providing alternative methods of visibility outside of Steam can help to grow games on Steam. In fact, the evidence suggests that Steam

³⁸⁷ Erik Johnson, Dep. Tr., 9/26/2023, at 135:14–136:4.

Schwartz Report, 2/8/2024, ¶ 158, fn. 441.

Of the publishers in Valve’s transaction data, [REDACTED] are associated with at least one Steam Key activation. Those publishers are associated with [REDACTED] of revenue in Valve’s transaction Data.

³⁸⁸ Kristian Miller, Dep. Tr., 10/3/2023, at 60:1–6. (“Q. In your view, is one business objective of Steam Keys that Valve will reach customers who are not on Steam? A. In my view, the point of Steam Keys is that developers want them to reach customers who may or may not be on Steam already.”)

³⁸⁹ Tom Giardino, Dep. Tr., 11/2/2023, at 154:24–155:7.

³⁹⁰ Valve, Emails Regarding Steam Keys on Amazon, 12/25/2012 (VALVE_ANT_0294967–972 at VALVE_ANT_0294967).

³⁹¹ Valve, Emails Regarding Steam Keys on Amazon, 12/25/2012 (VALVE_ANT_0294967–972 at VALVE_ANT_0294967).

³⁹² A Steam Key seller may provide a game with increased visibility as: (a) the game may compete with fewer other games on the Steam Key seller’s website, (b) the Steam Key seller may promote or provide prominent placement to the game, or (c) the Steam Key seller may have access to a different customer base than Steam.

³⁹³ Schwartz Report, 2/8/2024, ¶ 234.

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Keys do lead to further success of a game on Steam. Valve assessed the revenue benefits associated with Steam Keys, concluding that “*games that do bundles with external sites* [REDACTED] [REDACTED]”³⁹⁴ As additional evidence, a May 2021 internal Valve presentation examined the impact of “external” bundles (e.g., Humble Bundle) on Steam revenues and reported [REDACTED].³⁹⁵ The presentation also noted that “[REDACTED] on Steam] and the sizes [REDACTED].”³⁹⁶

- (184) When customers acquire a game as a Steam Key and that game offers DLC and/or in-app purchases, those customers have the option to purchase such content through Steam.³⁹⁷ This then leads to additional revenue for Steam, as Valve would receive a commission on any subsequent sales.³⁹⁸
- (185) These benefits create strong incentives for Valve to continue offering Steam Keys in the but-for world. Indeed, as discussed above, Valve has long recognized these benefits. In the but-for world in which Steam would face increased competition, these incentives would remain unchanged at a minimum and perhaps become stronger, in an attempt to keep publishers and users on the platform.

7.3.3. Dr. Chiou’s effective commission rate analysis is unreliable

- (186) Dr. Chiou’s effective commission rate analysis uses unreliable assumptions, making the analysis itself unreliable. Dr. Chiou acknowledges that a decreased Valve commission would result in publishers paying a lower revenue share in the but-for world.³⁹⁹ However, Dr. Chiou

³⁹⁴ Valve, Emails Regarding Steam Keys and Steam Sales, 4/8/2021–5/18/2021 (VALVE_ANT_0051956–57, at VALVE_ANT_0051956). (Emphasis added.)

³⁹⁵ Valve, Presentation on Bundle Impact on Steam Revenues, 5/18/2021 (VALVE_ANT_0051958, at slide 3).

³⁹⁶ Valve, Presentation on Bundle Impact on Steam Revenues, 5/18/2021 (VALVE_ANT_0051958, at slide 3).

³⁹⁷ Alden Kroll, Dep. Tr., 11/16/2023, at 155:2–7. (“Q. Someone could buy a Steam key for a game, like Red Dead Redemption if it’s offered as a Steam key, activate the game on Steam and then use their Steam Wallet to purchase DLC for that game, correct? A. That’s correct.”)

³⁹⁸ Valve, Emails Regarding [REDACTED] Distribution, 8/10/2022–9/23/2022 (VALVE_ANT_0557762–791, at VALVE_ANT_0557776). (“Valve gets no royalties and charges no fees for Steam keys, full stop--but when a customer activates a Steam key, they own the game on Steam. Which means that if they go on to make in-game transactions, they’re just playing via Steam like any other user[.]”)

³⁹⁹ Lesley Chiou, Dep. Tr., 6/18/2024, 224:23–225:6. (“Q I didn’t ask about that. I asked about the actual revenue share rate. Let’s look -- so you agree that in the world -- first of all, in Scenario 1, Exhibit 2, in the scenario where only Valve lowered its commission, its revenue share, and the competing platform did not, that the actual amount of revenue share that the publisher pays is less; right? A Across the two platforms, yes.”)

testified at her deposition that using her own effective commission rate analysis, decreasing the commission rate would result in publishers paying a *higher* commission rate, contrary to basic logic.⁴⁰⁰

- (187) Dr. Chiou presents four “approximations” of Valve’s “effective revenue share[,]” each of which utilizes differing assumptions to estimate revenues generated by Steam Keys.⁴⁰¹ Dr. Chiou describes her methods for each approximation as follows:⁴⁰²
- a. “Approximation 1” assumes the number of Steam Keys sold to be equal to the number of Steam Keys redeemed, and the price at which those keys were sold to be equal to the games’ transacted Steam prices.
 - b. “Approximation 2” assumes the number of Steam Keys sold to be equal to the number of Steam Keys redeemed, and the price at which those keys were sold to be equal to a 20 percent discount on the games’ transacted Steam prices.
 - c. “Approximation 3” assumes the number of Steam Keys sold to be equal to the number of Steam Keys issued, and the price at which those keys were sold to be equal to the games’ transacted Steam prices.
 - d. “Approximation 4” assumes the number of Steam Keys sold to be equal to the number of Steam Keys issued, and the price at which those keys were sold to be equal to a 20 percent discount on the games’ transacted Steam prices.

- (188) As I describe below, Dr. Chiou’s assumptions relating to both the number of Steam Keys sold and the price at which Steam Keys were sold are flawed. I also describe how Dr. Chiou’s “approximations” fail to account for important elements of Steam Key sales.

Dr. Chiou’s assumption that Steam Keys issuances are equal to Steam Keys sold is unreliable

- (189) Dr. Chiou’s use of Steam Keys issued is not a reasonable approximation of the quantity of Steam Keys sold. The fact that Steam issues a Steam Key to a developer provides little to no insight on whether a non-Steam sale has occurred. A publisher must undertake additional steps before it can offer a Steam Key for sale,⁴⁰³ and a sale must actually occur between a

⁴⁰⁰ Lesley Chiou, Dep. Tr., 6/18/2024, 224:14–22. (“Q Okay. If you don’t mind. Now, looking at the actual revenue share paid by publisher numbers on -- on Exhibits 2 and 4, you would agree with me that a world in which Valve has a lower commission than today benefits the publisher; right? A So looking at this particular hypothetical here, there is -- the effective revenue share rate changes from 15 percent to 20 percent.”)

⁴⁰¹ Chiou Report, 5/17/2024, ¶¶ 159, 163.

⁴⁰² Chiou Report, 5/17/2024, ¶ 163.

⁴⁰³ Publishers that wish to utilize Steam Keys must first submit a request to Valve via Steamworks. A Steam Key request requires a publisher to specify the type of key to request as well as the quantity of keys requested. Steam Key types include: (a) Default Release keys, which are the “most common type of key on Steam” and “are appropriate for retail boxes

consumer and a non-Steam store.⁴⁰⁴ Thus, an issued Steam Key does not equate to a sold Steam Key. Indeed, Dr. Chiou acknowledges that “publishers do not necessarily earn revenue on every key issued” yet she still utilizes Steam Keys issued, claiming that publishers “do earn revenue on issued keys that were sold even if not redeemed.”⁴⁰⁵

Dr. Chiou’s estimates of prices at which Steam Keys are sold are flawed

- (190) Dr. Chiou acknowledges that she cannot “calculate effective revenue shares because data on publishers’ revenue from Steam key sales are not available in this matter.”⁴⁰⁶ As a result, Dr. Chiou’s analysis requires that she makes assumptions about the prices at which Steam Keys sold on other platforms. She has neither the data nor any relevant economic theory to support any of the assumptions she makes. In fact, Dr. Chiou’s assumptions regarding those prices are flawed and, as a result, her estimates are unreliable.
- (191) Dr. Chiou imputes prices for Steam Key issuances and redemptions based on the average prices of corresponding games sold directly on Steam.⁴⁰⁷ She first matches Steam Key issuances and redemptions to on-Steam sales occurring on the same day and in the same country as the issuance/redemption.⁴⁰⁸ This is not a reliable basis for an assumption about price. The user purchase of Steam Keys likely does not necessarily align on timing with the issuance of Steam Keys by Valve or the redemption of those Steam Keys. Steps are required from issuance to the ability for a publisher to sell the Steam Key (as described above); there

or sales on other digital stores[;]” (b) Release State Override keys, which “are used to grant access to a product prior to its release on Steam” and “are intended for small beta tests and press/influencer access[;]” and (c) Developer Autogrant keys, which are “intended for developer use only” and “used to provide developers with access to the product if their Steam account is NOT already in [their] Steamworks partner group.” Once a request is either automatically or manually approved by Valve, keys are issued to the publisher as a plain text file and available for download via Steamworks. See:

Steamworks Website, Steamworks Documentation: Steam Keys, <https://partner.steamgames.com/doc/features/keys> (accessed 1/30/2024).

⁴⁰⁴ Once a publisher has requested and retrieved Steam Keys from Valve, they may then sell Steam Keys either directly, such as through the publisher’s website, or through a third party, such as Humble Bundle. Either option requires the publisher to complete additional steps before a sale may occur. For example, a publisher wishing to utilize Humble Bundle to sell Steam Keys must complete further steps to make its Steam Keys available for sale, such as creating a game page on Humble and uploading the Steam Key file it received from Valve to Humble Bundle’s content manager. See:

Humble Bundle Website, Humble Self-Service Tools, <https://support.humblebundle.com/hc/en-us/articles/214918618-Humble-Self-Service-Tools#manage-content> (accessed 6/14/2024).

⁴⁰⁵ Chiou Report, 5/17/2024, ¶ 404.

⁴⁰⁶ Chiou Report, 5/17/2024, ¶ 159.

⁴⁰⁷ Chiou Report, 5/17/2024, ¶ 467, 471.

⁴⁰⁸ Chiou Report, 5/17/2024, ¶ 467, 471. (“For each redemption, I calculate the average sale price of the super package in the country of redemption on the redemption date.”)

is time between listing a Steam Key to a user sale; and finally, there is time between when the user purchases the Steam Key and when they redeem it.

(192) Under Dr. Chiou's alternative method of determining pricing, she matches prices occurring in the same time period (*e.g.*, week, month, quarter, half-year, year) and in the same country as the issuance redemption, progressing through each time period when she does not find a matching sale.⁴⁰⁹ This, too, is flawed, and leads to unreliable pricing estimates. Dr. Chiou's second method fails to properly account for the large share of purchases during sale periods. Specifically, Dr. Chiou averages *daily* game price over time, rather than a weighted average price that would account for units sold at various prices per day. Dr. Chiou assumes there is no relationship between a game's price and its quantity purchased other than the day it is purchased. Instead, she weights each day as equivalent (rather than the total sales for that day). For example, if a game were priced at \$1, \$5, \$5, \$5, and \$5 over five days, Dr. Chiou would assume the Steam Key price over that period to be \$4.20. However, on sale days, many more units were likely sold, bringing down the actual average price over time. According to Dr. Chiou herself, [REDACTED] of units sold on the Steam platform occur during when games are discounted from their list prices.⁴¹⁰ Using the same example from above, if [REDACTED] of units were sold on the day at which the game were discounted, the weighted average price during that time would be [REDACTED].⁴¹¹

(193) Below, I demonstrate the errors caused by Dr. Chiou's simplistic and incorrect method. I first calculate a unit-weighted average price across all packages with corresponding key sales and across all sales of those packages during the damages period. A weighted average price better reflects the likely price at which a Steam Key would be sold on another platform as it reflects the likelihood that a transaction would occur at a given price—if more transactions occur at sales prices, those prices will have a greater impact on the weighted average than the fewer number of transactions that occur at the non-sales prices. Next, I compare this weighted average price to Dr. Chiou's estimated Steam Key prices. Figure 5 below plots the average

⁴⁰⁹ Chiou Report, 5/17/2024, ¶ 467, 471. ("Key redemptions for a given super package may occur on a date on which there are no associated sales of that super package in the redemption country. In these instances, I estimate the price in wider time bands. I start at the date level and then, as there are no sales for a time band in the country, I calculate the average price at the next level progressing through the following time bands: (i) Week. (ii) Month. (iii) Quarter. (iv) Half-year. (v) Year. (vi) The most recent year prior to the redemption year with positive sales in the relevant country. (vii) The year most immediately following the redemption year with positive sales in the relevant country.)

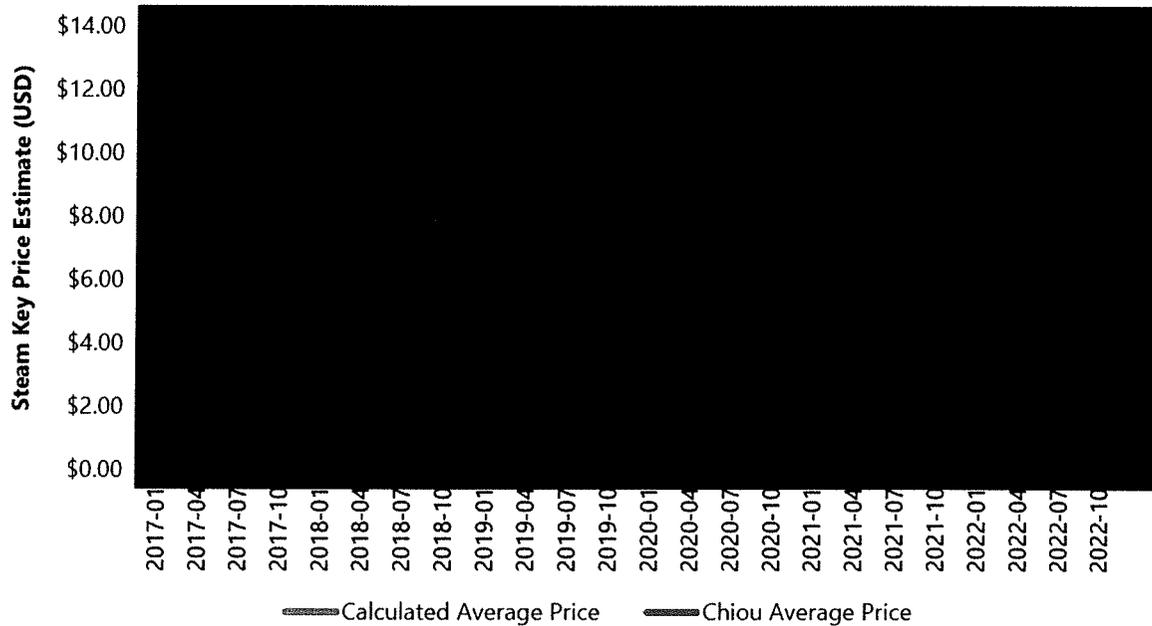
⁴¹⁰ Chiou Report, 5/17/2024, ¶ 291.

⁴¹¹ Calculation: $([REDACTED] \times \$1) + ([REDACTED] \times \$5) = [REDACTED]$.

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daily price for keys according to each method. By not accounting properly for total units sold during sales, Dr. Chiou’s method results in overstated price estimates.

Figure 5: Dr. Chiou’s Overestimated Average Daily Prices⁴¹²



Dr. Langer’s analysis of effective commission rates is unreliable

(194) Dr. Langer also attempts to estimate Valve’s effective revenue share.⁴¹³ Dr. Langer’s estimates are based on assumptions similar to Dr. Chiou’s, and she also fails to provide a meaningful or reliable calculation.⁴¹⁴ Dr. Langer acknowledges that she “does not possess data on

⁴¹² See Reply Attachment F-1.

⁴¹³ Langer Report, 5/17/2024, ¶ 148.

⁴¹⁴ Dr. Langer’s approximations of Steam Key revenues correspond to Dr. Chiou’s Approximation 1 and Approximation 3. See: Langer Report, 5/17/2024, ¶ 151, fn. 204. (“To approximate revenues from Steam key sales using Steam key redemptions, I assume that the number of Steam keys sold is equal to the number of Steam keys redeemed and that the prices at which they were sold are equal to the prices of the associated packages on Steam. I use Steam transaction data to assign a price to each redemption. When Steam transactions for the associated package are observed on the same day and in the same country as the Steam key redemption, I assume that the Steam key was sold at the average price in that country on that day. If there are no same-day and same-country transactions observed for that package, I use a continuously broader time interval (i.e., week, month, three months, six months, year, year prior to the year of redemption, and year following the redemption year) for the average price in the country of redemption. If there are no transactions for that package in the country of redemption, I assume that the Steam key was sold at the average price across all other countries during the year of redemption. Finally, if there are no transaction data available for the associated package, I assume that the Steam key was sold at a price of zero dollars. To approximate revenues from Steam key sales using Steam key issuances, I assume that the number of Steam keys sold is equal to the number of Steam keys issued and that the prices at which they were

publishers’ Steam key sales[,]” and thus she cannot “determine how close [her] approximations may be to what publishers actually did in the as-is world[.]”⁴¹⁵

(195) Nevertheless, Dr. Langer, examines “two possible but-for world outcomes that make different assumptions about Steam keys: (i) Steam key sales are identical in the but-for world; (ii) there are no Steam key sales in the but-for world.”⁴¹⁶ As I discuss above, Dr. Langer’s assumption that there would be no Steam Key sales in the but-for world is inconsistent with the market and the way Valve has operated and continues to operate the Steam platform. Additionally, as Dr. Langer’s analysis is based on many of the same unsupported assumptions made by Dr. Chiou, I conclude that her estimate of Valve’s effective commission rate is similarly unreliable. Dr. Langer appears to acknowledge that the two scenarios she suggests represent the “extremes” of possible outcomes: “Publishers’ revenues from Steam key sales might also lie somewhere in between these two extremes.”⁴¹⁷ Moreover, Dr. Langer acknowledged that publishers are still damaged in two of her four scenarios.⁴¹⁸ As such, even she recognizes that her estimates are unreliable and, in some cases, support that all publishers are still harmed by Valve’s supracompetitive commission rate.

sold are equal to the prices of the associated packages on Steam. To approximate when and where these Steam keys were distributed, I use the average price across all days and countries of redemption from the redemption price approximation described above.”)

⁴¹⁵ Langer Report, 5/17/2024, ¶ 149.

⁴¹⁶ Langer Report, 5/17/2024, ¶ 152.

⁴¹⁷ Langer Report, 5/17/2024, fn. 207.

⁴¹⁸ Ashley Langer, Dep. Tr., 6/21/2024, at 217:7–19. (“Q. Would you agree that your blue scenarios, both solid and dashed, show positive damages throughout? A. As I said before, related to Exhibit 4, in Exhibit 4 I am only changing the assumptions surrounding Steam key use. I’m not changing anything else about Dr. Schwartz’s approach, which I’ve said I believe is unreliable in many other ways. And so I’m providing a variety of alternative assumptions here, again, not saying that any of these are affirmative. I believe it is true in Exhibit 4 that the blue solid and blue dashed lines do not go below zero for damages.”)

8. The Schwartz Damages Model Uses Common Evidence to Provide a Reliable Damages Quantification

(196) My calculation of class-wide damages links the widely used Landes and Posner model, the widely used Lerner Index, an aspect of the canonical Rochet and Tirole analysis of two-sided platforms, and the realities of how Valve has operated the Steam platform over time. There is no clean pre-period, that is, a period where Steam operated without the PMFN. Without an observable control period, assumptions are required to characterize a but-for world. My assumptions are reasonable, grounded in the reality of Valve’s real-world behavior and/or made to present a conservative estimate of damages. While Dr. Langer wants to add complication to the model for the illusion of rigor,⁴¹⁹ by focusing on the fundamental aspects of the market and key determinants of firm behavior, my model draws a robust link between Steam’s but-for market share and the damages caused by the PMFN.

8.1. But-for world and damages conclusions are grounded in reality

(197) My conclusions about the but-for world are overwhelmingly based upon Valve’s behavior in the real world. Such behavior reflects Valve’s preference for the operation of the Steam platform and provides guidance as to Valve’s behavior in the but-for world.

8.1.1. Valve’s one-sided pricing model

(198) Steam facilitates transactions between consumers and developers. However, a key element when modeling this type of two-sided transaction market is how many prices need to be considered and the relationship between prices charged to consumers and producers. Dr. Langer wrongly claims that “by modeling the industry as ‘one sided,’ Dr. Schwartz ignores that some of the value of platforms comes from building and maintaining a base of consumers and publishers.”⁴²⁰ While Valve charges a single fee, I am *not* modeling the industry as one-sided.

⁴¹⁹ See, e.g., Langer Report, 5/17/2024, ¶ 89. (“Platforms differ in the features they offer, and publishers differ in how they value those features. Dr. Schwartz does not model these features that platforms offer, the determinants of publisher choices, or the varied consumer bases of platforms that drive these publisher choices. Further, Dr. Schwartz does not model publishers’ choice of platform based on the revenue shares platforms charge, let alone the other features platforms offer.”)

⁴²⁰ Langer Report, 5/17/2024, ¶ 119.

- (199) In my Opening Report, when describing my damages model, I explicitly state that while Steam “acts as a two-sided platform in facilitating transactions between publishers and users, its pricing structure is implemented on only one side of the platform.”⁴²¹ I also note that “[w]hile the *direct* pricing on the Steam platform is one-sided in that Valve only collects fees from publishers, the commission rate charged impacts consumer prices . . .[.] As such, Valve’s pricing to publishers affects *both* sides of the market.”⁴²² I model a single Steam fee because that matches Valve’s behavior and is what Valve has done throughout the history of the Steam platform. Thus, the assumption fits the facts of the case. But, while there is a single transaction fee charged by Steam, my model of demand incorporates preferences and behaviors from both publishers and consumers. Demand in my damages model relates Steam’s platform fee (their single fee charged to publishers) to the quantity of transactions completed on Steam.⁴²³ The relationship between platform fees and total transactions reflects the interaction of the publisher’s decision to set a game price and the consumers decision to buy the game. Thus, both sides are explicitly considered in the demand function even though Steam utilizes only one fee in the actual world.
- (200) My analysis of pass-through also demonstrates that I analyze the market as two-sided.⁴²⁴ I consider the share of cost savings that publishers, on one side of the market, would pass through to consumers, on the other side of the market. The analysis I use to estimate a pass-through rate uses data reflecting behaviors on both sides of the market: pricing decisions by publishers and the corresponding purchases by consumers.
- (201) Dr. Langer claims that I model “Steam as one-sided[.]”⁴²⁵ She is simply wrong, ignoring specific language in my Opening Report.⁴²⁶ She claims that “[v]ideo game distributors are canonical two-sided platforms[.]”⁴²⁷ and that “two-sided markets differ from the textbook treatment of multiproduct oligopoly or monopoly.”⁴²⁸ I agree, but I do not model Steam as one-sided. Dr. Langer’s criticism simply ignores Valve’s pricing behavior and my description of my damages

⁴²¹ Schwartz Opening Report, 2/8/2024, ¶ 332.

⁴²² Schwartz Opening Report, 2/8/2024, ¶ 332

⁴²³ Schwartz Opening Report, 2/8/2024, § 8.3.2.

⁴²⁴ Schwartz Opening Report, 2/8/2024, § 8.4.

⁴²⁵ Langer Report, 5/17/2024, ¶ 123.

⁴²⁶ Schwartz Opening Report, 2/8/2024, ¶ 332.

⁴²⁷ Langer Report, 5/17/2024, ¶ 123.

⁴²⁸ Langer Report, 5/17/2024, ¶ 123.

model.⁴²⁹ In my Opening Report, I point out that Steam does not charge consumers directly, and explain further that Steam has historically used an agency model.⁴³⁰ Steam’s pricing model is directed towards one side, sellers (and not consumers),⁴³¹ consistent with the categorization set forth by Rochet and Tirole.⁴³²

(202) Dr. Langer’s argument is inconsistent with the economic literature. Two-sided economic theory suggests that fees charged by Valve on Steam can be treated as a single price, contrary to Dr. Langer’s claim otherwise.⁴³³ Rochet and Tirole, two economists who performed some of the earliest work on two-sided platforms (and for which Tirole received the Nobel prize) suggest that platforms can be modeled using one price when certain conditions are met,⁴³⁴ these conditions are met by Steam. Thus, when I employ a single-pricing model, I am being consistent with the leading economic literature on the topic. Rochet and Tirole (2006) define a market as one-sided if the number of purchases depends only on price level and not price

⁴²⁹ Dr. Langer claims that because Rochet and Tirole categorize console markets as using two-sided pricing, Steam should also be analyzed using two-sided pricing. This is incorrect. I do not disagree with Rochet and Tirole on this point. However, a key difference between the markets for Consoles and for P.C. game platforms like Steam is that Steam does not charge consumers. Consoles must sell the physical platform, the game console, to consumers and so must choose a price for both sides. As mentioned above, Steam does not charge consumers and so it would be inappropriate to include a fee on consumers, which does not exist, in my model.

Langer Report, 5/17/2024, ¶ 123.

Rochet, Jean-Charles and Jean Tirole (2006), “Two-Sided Markets: A Progress Report,” *The RAND Journal of Economics*, 37(3): 645–667, at 645, 647. (“In the case of videogames, platforms may charge fees to game developers for development kits ($A^S > 0$) on top of royalties per copy sold ($a^S > 0$); they charge gamers for the videogame console ($A^B > 0$).”)

Note that Steam introduced a handheld system, the Steam Deck, in 2022. The Steam Deck is not required to access Steam and thus is sold to a relatively small portion of users on Steam rather than all users, as would be required in the case of consoles. In 2022, for example, there were over 100 million monthly active users on Steam and only over 1 million total Steam Deck units sold up to that point in time. See:

Valve ██████████ Visits Valve, 12/2022 (VALVE_ANT_1818380, at Slide 4,7).

⁴³⁰ Schwartz Report, 2/8/2024, ¶¶ 289, 339, 340.

⁴³¹ Schwartz Report, 2/8/2024, ¶ 332.

⁴³² Schwartz Report, 2/8/2024, ¶ 337.

Rochet, Jean-Charles and Jean Tirole (2006), “Two-Sided Markets: A Progress Report,” *The RAND Journal of Economics*, 37(3): 645–667, at 646.

⁴³³ Langer Report, 5/17/2024, ¶ 123. (“Dr. Schwartz (as well as Prof. Joost Rietveld) acknowledges that Steam is a two-sided platform. . . Yet he models Steam as one-sided instead.”)

⁴³⁴ Schwartz Report, 2/8/2024, ¶¶ 192–193.

Note that in this context, the “price” referred to by Rochet and Tirole in the context of their model is the price the Platform charges users. In our case, that “price” is the platform fee charged to developers.

Rochet, Jean-Charles and Jean Tirole (2006), “Two-Sided Markets: A Progress Report,” *The RAND Journal of Economics*, 37(3): 645–667, at 648.

structure.⁴³⁵ In the case at hand, Steam's pricing conduct can be modeled as one-sided because the volume of transactions on the platform depends only on the aggregate price level and not on the way this price is allocated between buyers and sellers. Dr. Langer ignores this point from Rochet and Tirole. The market is two-sided; there is no disagreement on that point. However, modeling pricing by suggesting Steam will be charging separate fees to consumers and developers is not consistent with the facts of the case. It would depart from Valve’s actual behavior, without any reasonable basis for doing so. It would not be consistent with Valve’s real-world pricing conduct on Steam or the conduct they would most likely engage in in the but-for world. Dr. Langer appears to be suggesting that I should be modeling a pricing structure that has never existed.⁴³⁶ It would be wrong to do so, as a matter of economics.

(203) Rochet and Tirole (2003) describe three conditions under which a pricing system can be considered price-neutral: (1) a lack of transaction costs; (2) a lack of volume-insensitive costs; and (3) a lack of constraints on pass-through.⁴³⁷ Transaction costs “refer to a broad range of frictions that make it costly for one side of the market to pass through a redistribution of charges to the other side.”⁴³⁸ Steam does not have transaction costs of this type. Developers are already setting their own price specifically on Steam. Setting that price to pass through savings from a drop in costs does not lead to any additional transaction costs.

(204) Volume insensitive costs are costs that are “not proportional to the number of transactions on the platform.”⁴³⁹ Dr. Langer incorrectly applies a discussion of the video game console market by Rochet and Tirole in their 2003 paper to the PC gaming market of today.⁴⁴⁰ For a variety of reasons, the console market is a poor benchmark for the current PC gaming market. Developing a game specifically for a console requires code tailored to the console, but any PC

⁴³⁵ Rochet, Jean-Charles and Jean Tirole (2006), “Two-Sided Markets: A Progress Report,” *The RAND Journal of Economics*, 37(3): 645–667, at 648.

⁴³⁶ Ashley Langer, Dep. Tr., 6/21/2024, at 116:10–117:8.

⁴³⁷ Rochet, Jean-Charles and Jean Tirole (2003), “Platform Competition in Two-sided Markets,” *Journal of the European Economic Association* 1(4): 990–1029, at 1019–1020.

⁴³⁸ Rochet, Jean-Charles and Jean Tirole (2003), “Platform Competition in Two-sided Markets,” *Journal of the European Economic Association* 1(4): 990–1029, at 1019.

⁴³⁹ Rochet, Jean-Charles and Jean Tirole (2003), “Platform Competition in Two-sided Markets,” *Journal of the European Economic Association* 1(4): 990–1029, at 1019.

⁴⁴⁰ Langer Report, 5/17/2024, ¶ 129.

game can be launched on Steam with minimal fixed costs.⁴⁴¹ Unlike consoles, Valve does not set the price for the hardware required to utilize the platform.

(205) Dr. Langer claims that there are specific volume-insensitive “membership-benefits” associated with Steam.⁴⁴² Some of the benefits she mentions are not actually volume-insensitive; others are of little value. For example, Dr. Langer states that “Steam stores users’ game libraries indefinitely and allows users to easily access any game they purchased on any of their computers.”⁴⁴³ The benefit of accessing a game purchased through Steam is by definition contingent on purchasing the game through Steam. Similarly, remote play for a specific game is contingent on the purchase of that specific game.⁴⁴⁴ By being contingent on purchasing the game, the benefit from these features depends on the quantity of games purchase and so are not volume-insensitive.⁴⁴⁵ In her testimony, Dr. Langer also mentions that “features like chat that are valuable regardless of whether you buy one game or lots,”⁴⁴⁶ but chatting on Steam would be more valuable the more games and content is used on Steam, all else equal. This means the benefits of the chat feature are not volume-insensitive.

(206) Additionally, these membership benefits would not disappear in the but-for world. Dr. Langer claims that “[i]n the but-for world where, according to Dr. Schwartz, Steam’s market share would fall by approximately █ percentage points, Steam would likely not be able to offer the same set of features to users and publishers of the platform.”⁴⁴⁷ This is a necessary (though not sufficient) assumption for Dr. Langer’s assertion that I improperly ignore membership benefits. I explain in more detail in Section 8.1.4 why Dr. Langer is incorrect. For purposes of the immediate discussion, Dr. Langer’s argument makes no economic sense. She posits that in a competitive market, where competitive pressures are increased relative to the actual

⁴⁴¹ Jason Owens, Dep. Tr., 12/5/2023, at 213:3–22. (“Q. What about investing in a porting opportunity? Q. What is that -- what do you take that to mean? A. I would take that to mean somebody would, for a share of the profits, help us port the game to different formats. Q. Along the lines we were discussing before, to PlayStation VR? A. Yes. Q. And the other non-VR consoles? A. If somebody would help fund development, we would share in the profits if they could help get us onto, you know, other modes, other means, you know. Q. And you needed money for that? A. Yes, it would require basically recreating and almost making a new game.”).

See, also: █, Dep. Tr., █, at 176:3–182:2.

⁴⁴² Langer Report, 5/17/2024, ¶ 130.

⁴⁴³ Langer Report, 5/17/2024, ¶ 130

⁴⁴⁴ Langer Report, 5/17/2024, ¶ 130

⁴⁴⁵ A given user will derive more benefit, all else equal, if they purchase and play more games.

⁴⁴⁶ Ashley Langer, Dep. Tr., 6/21/2024, at 126:21–127:23.

⁴⁴⁷ Langer Report, 5/17/2024, ¶ 133

world, Steam would compete less. The likely outcome is that competition would compel Valve to enhance the Steam platform to meet the challenge of its rival platforms. Those pressures would lead Steam to maintain, or, more likely, enhance membership benefits. By holding these membership benefits fixed, I provide a lower bound estimate on damages to publishers.

- (207) The third condition is met, as Valve does not mandate how much cost changes are passed through to consumers. These conditions are met and allow me to model a single platform fee for Steam, consistent with the economic literature. There is an alternative justification for using a single fee, namely that the single fee model I adopt matches Steam’s behavior. Steam uses a single fee charged to developers in the real world and is likely to continue doing so in the but-for world. Modeling the but for world with one price is justified simply because it matches the most likely action Steam will continue to take in the but-for world.

8.1.2. Valve’s tiered pricing structure implementation

- (208) In my Opening Report, I calculate Steam’s effective commission rate over a period that encompasses both the single price model (one commission rate) and the tiered pricing model (different rates, depending on revenues).⁴⁴⁸ I calculate the but-for effective commission rate using the real-world commission rate as an input and modify the commission rate charged to each publisher in proportional to the change seen on the market-wide effective commission rate. This is the most reasonable approach that matches Steam’s but-for world with Steam’s real-world conduct.

- (209) Dr. Langer offers no affirmative opinion on what would happen to Steam’s tiered system in the but-for world, saying “I’m not offering the opinion that Valve would abandon the tiered system.”⁴⁴⁹ However, Dr. Langer takes issue with my approach, stating that Steam could in fact do an infinite number of things with their prices in a but-for world. She said “I’m opining that the revenue shares -- share tiers could go away, they could change, they could be related to other dimensions of publisher differences. Right now they’re based on revenue of particular

⁴⁴⁸ Schwartz Opening Report, 2/8/2024, § 3.3.4.

⁴⁴⁹ Ashley Langer, Dep. Tr., 6/21/2024, at 37:18–38:12.

See also:

Ashley Langer, Dep. Tr., 6/21/2024, at 39:4–20. (“... I am not providing an affirmative opinion of what they would change to...”)

Ashley Langer, Dep. Tr., 6/21/2024, at 41:22–42:8. (“Q. Are you opining that there’s no way Valve would maintain a revenue share tier system in the but-for world? A. It’s a very similar answer to what I’ve told you before. I am not providing an affirmative opinion about what the revenue share tiers or the revenue share itself would look like from the but-for world.”)

games. They could be based on other things.”⁴⁵⁰ The premise of this critique is that anything can happen and because anything can happen, any specific modeling choices must be incorrect. Following Dr. Langer’s line of thinking, it would be impossible to model a but-for world in any litigation context, *ever*. That clearly cannot be the correct standard.

- (210) The evidence supports the general approach I take. Additional downward pressure on aggregate fees would benefit the publishers who pay those fees. To claim otherwise would disconnect the analysis from the facts of the case and would defy common sense.

8.1.3. Valve’s provision of Steam Keys

- (211) Valve offers Steam Keys in the actual world to attract and keep consumers on its platform.⁴⁵¹ Additionally, I have concluded that Valve’s incentives to offer Steam Keys would be even greater in the but-for world due to increased competitive pressure Valve would face.⁴⁵² Thus, my conclusion about Valve’s but-for provision of Steam Keys is based on how Valve uses Steam Keys in the actual world—as a means to compete with other platforms.
- (212) Dr. Langer critiques my damages model as not accounting for Steam Key usage in the actual or but-for worlds.⁴⁵³ Despite acknowledging that Steam Key sales occur outside of Steam,⁴⁵⁴ Dr. Langer incorrectly includes Steam Keys in calculating Steam’s effective revenue share.⁴⁵⁵ By including Steam Keys in an effective revenue share calculation for Steam, Dr. Langer gives Steam the benefit of revenue earned on other platforms despite publishers still paying a commission on those revenues. Such a calculation is economically unsupported and yields results that are nonsensical when compared to a *total* effective revenue share (*i.e.*, across all platforms) for a publisher, as Dr. Chiou’s deposition testimony illustrates.⁴⁵⁶ In Dr. Chiou’s

⁴⁵⁰ Ashley Langer, Dep. Tr., 6/21/2024, at 39:21–40:5.

⁴⁵¹ Schwartz Opening Report, 2/8/2024, § 3.3.5.

⁴⁵² See Section 8.1.4 for an explanation of why Steam would increase the benefits to users and publishers in the but-for world.

⁴⁵³ Langer Report, 5/17/2024, ¶ 148.

⁴⁵⁴ Langer Report, 5/17/2024, ¶ 99.

⁴⁵⁵ See, *e.g.*, Langer Report, 5/17/2024, ¶¶ 96, 97, 148.

⁴⁵⁶ See:

Lesley Chiou, Dep. Tr., 6/18/2024, 216:11–225:12.

Lesley Chiou, Dep. Tr., 6/18/2024, 224:14–22. (“Q. Okay. If you don't mind. Now, looking at the actual revenue share paid by publisher numbers on -- on Exhibits 2 and 4, you would agree with me that a world in which Valve has a lower commission than today benefits the publisher; right? A. So looking at this particular hypothetical here, there is -- the effective revenue share rate changes from 15 percent to 20 percent.”)

deposition, she was presented with a hypothetical scenario in which a publisher had half of its sales on Steam with a 30% commission and half of its sales via Steam Keys on a different platform that also charges a 30% commission. Dr. Chiou’s formula implies the “Effective Revenue Share” is 15%, even though the publisher pays 30% on all transactions—a bizarre result on its own. When considering what happens in the but-for world, Chiou’s formula gets even more nonsensical. In the but-for world where commissions go to 20% but Steam Keys disappear, the “Effective Revenue Share” is 20%. Chiou’s “Effective Revenue Share” formula thus implies the class member is worse off because its “Effective Revenue Share” went up from 15% to 20%—even though the commissions actually paid for the class member decreased from 30% to 20%. It defies economics and common sense for a publisher paying a 20% price to be worse off than a publisher paying a 30% price.

- (213) Given that accounting for Steam Key usage in calculating effective revenue share leads to nonsensical results, Dr. Langer’s suggestion that Steam Keys should be accounted for in a damages calculation appears to be another attempt at offering an argument why individual inquiry is needed,⁴⁵⁷ albeit one that lacks any economic merit. However, what Dr. Langer fails to acknowledge is that, for the purposes of *damages*, what matters is the revenue share the publisher paid on transactions *that occurred on Steam in the actual world*. Indeed, the transactions implicated by Valve’s anticompetitive conduct are those in which the overcharge occurred, *i.e.*, the transactions that occurred on Steam in the actual world. None of those transactions involve Steam Keys. Valve offers Steam Keys as a meaningful way to attract and keep consumers on its platform, and the incentives to offer Steam Keys would likely be even greater in the but-for world where Valve has to compete on the merits with rival platforms.⁴⁵⁸ But, even if one were to conclude that Steam Keys would not exist in the but-for world, such a conclusion would not matter for evaluating damages since all Steam Key transactions occurred outside of Steam in the actual world and were not subject to Valve’s anticompetitive overcharge.

8.1.4. Assuming that overall platform quality falls in the but-for world is contrary to the facts of the case

- (214) While Dr. Langer’s assignment was not to take affirmative positions (see Section 1.3), many of Dr. Langer’s criticisms hinge on the idea that the overall quality of platforms would be lower

⁴⁵⁷ Langer Report, 5/17/2024, ¶ 149.

⁴⁵⁸ Schwartz Opening Report, 2/8/2024, § 3.3.5.

in the but-for world absent the PMFN. When asked if competition in the but-for world could look different than what I outline, she responds:⁴⁵⁹

So it matters what choices a publisher has in the but-for world. It matters not just the -- the names, for instance, of the platforms but what revenue shares they're charging, what features they're offering, how many customers they have, because that's, of course, really important to publishers when deciding where to offer games and how to price them. All of those things are important to publishers. They matter. And explicitly in this section of the paper, I'm showing how -- that they can matter for whether a publisher is harmed by the alleged challenged conduct or if they are harmed, by how much.

(215) Additionally, when discussing an example from her report where she suggests ██████ would be harmed by the removal of the PMFN she states:⁴⁶⁰

Since Steam would be reacting to this substantial change in market share that Dr. Schwartz is proposing, that may make Steam less attractive to ██████. ██████ may move ██████ to what it now sees as its best alternative, which does not have to be as good as Steam is now in the current world, but it's better than what Steam would be in the but for world. . .

(216) Competition improves quality, encourages innovation, and improves platform features, and the PMFN prevents price competition, injuring competition generally.⁴⁶¹ These facts make the hypothetical scenario posed by Dr. Langer irrelevant to the case. The facts of the case show that Steam would not need to cut quality in the but-for world, and, under stiffer competition, Steam would only have more incentive to innovate and improve quality.⁴⁶²

⁴⁵⁹ Ashley Langer, Dep. Tr., 6/21/2024, at 88:18–89:13.

⁴⁶⁰ Ashley Langer, Dep. Tr., 6/21/2024, at 96:14–98:17.

Dr. Langer is careful to qualify that she does not actually affirmatively believe this to be the case in the video game only that it is one of many things to consider. See:

Ashley Langer, Dep. Tr., 6/21/2024, at 96:14–98:17. (“ . . . A. I'm not proposing that this is -- you know, this is not an affirmative statement. All I'm trying to say in this paragraph is there are many different things that will change, and economists think about this stuff, and we care about this stuff when we understand the impact of an alleged -- or sorry -- of a policy change, any policy change, but in this context, of the removal of an alleged PMFN, and it matters. That's what this paragraph is talking about.”)

⁴⁶¹ Schwartz Opening Report, 2/8/2024, § 6.3.

⁴⁶² As mentioned before, Dr. Langer conducted only a cursory review of the record evidence in the case, relying upon 1 produced document and 11 depositions.

A search for “VALVE_ANT” in Dr. Langer’s report returns only one citation to a deposition exhibit VALVE_ANT_2392320–3. See: Langer Report, 5/17/2024, fn. 117.

Dr. Langer cites 11 depositions in her documents relied upon. Additionally, Dr. Langer testified to using only 11 case documents including depositions. See: Langer Report, 5/17/2024, at Appendix B, p. 137.; Ashley Langer, Dep. Tr., 6/21/2024, at 23:18–24:7.

(217) That Valve has market power, is highly profitable, and prices ██████████, is relevant to the case and leads me to conclude that Valve would be able to afford existing platform features at a lower transaction fee.⁴⁶³ Concluding that Steam currently has market power and would face steeper competition in a but-for world suggests that, if anything, Steam’s incentive to innovate and improve quality would be higher in the but for world where there is more competition.⁴⁶⁴

8.2. Simplifying assumptions are conservative in nature

8.2.1. Using the overcharge on Steam gives the minimum overcharge to all developers

(218) Dr. Langer claims that my “‘overcharge’ depends on a publisher’s but-for revenue share, which would likely vary with platform choice.”⁴⁶⁵ This is incorrect and a misrepresentation of my analysis. The sales on which my damages calculation is based are sales actually made on Steam in the real-world. To measure damages, I consider the difference in the amount developers would pay as commission on those sales in a but-for world.⁴⁶⁶ In the but-for world, sales currently made on Steam will either stay on Steam or be made on an alternative platform. By estimating damages using the price change on Steam times the pass-through rate, I obtain the minimum damages caused by the PMFN to all developers (*i.e.*, I conclude that Steam’s

She consistently testified that engaging with the facts and circumstances in this case outside her assignment. When asked if a 30% commission is above distribution costs, Dr. Langer replied that was “not part of [her] assignment[.]” See:

Ashley Langer, Dep. Tr., 6/21/2024, at 62:8–21.

When asked if she analyzed Valve’s costs or profitability she replied “No, I have not -- it’s not part of my assignment to look at Valve’s costs or profitability. . . .” See:

Ashley Langer, Dep. Tr., 6/21/2024, at 62:8–21.

Additionally, she believes Steam’s market power is not part of her assignment, saying “I am not opining on whether Valve has market power in some market or any market.” See:

Ashley Langer, Dep. Tr., 6/21/2024, at 30:21–31:10.

Dr. Langer chooses not to engage with these specific case facts despite agreeing, in the abstract, that engaging with industry and case specific facts is important, saying, “[w]e have to understand whether the model is accurately reflecting what’s happening in the industry. . . .” See:

Ashley Langer, Dep. Tr., 6/21/2024, at 66:15–67:10.

⁴⁶³ Schwartz Opening Report, 2/8/2024, § 4.2.4.

⁴⁶⁴ See Section 7.1.1 for further discussion.

See also: Schwartz Opening Report, 2/8/2024, § 6.3.

⁴⁶⁵ Langer Report, 5/17/2024, ¶ 139.

⁴⁶⁶ Schwartz Opening Report, 2/8/2024, ¶¶ 398–405.

but-for commission rate is an upper bound on the commission rate publishers would pay in the but-for world). This approach is favorable to Valve.

- (219) In her deposition, Dr. Langer acknowledges that lower Steam fees could benefit all publishers. When asked if Steam’s change from a 30% transaction fee to the tiered system benefited all publishers, Dr. Langer clarified that “[t]here’s the potential that any publishers could benefit or all publishers could benefit.”⁴⁶⁷ Dr. Chiou agrees unequivocally that a decrease in Steam’s fees benefits all publishers even if the reduction only applies to high earning publishers, saying “[b]y structuring its new revenue shares to benefit firms who publish the highest selling games, Steam benefits all users of its platform”⁴⁶⁸
- (220) If a sale stays on Steam in the but-for world, the transaction fee paid by the publisher falls. In this case, the damage to the publisher is the change in the transaction fee Steam charges times the pass-through rate. The change in the fee represents a cost reduction from which the publisher benefits, and multiplying by the pass-through rate adjusts for any price drop implemented by publishers.
- (221) As Dr. Langer correctly points out, “in the but-for world, some publishers will sell their games on other platforms besides Steam.”⁴⁶⁹ What Dr. Langer either ignores or misunderstands is that by using Steam’s fee change for all sales, I am establishing the minimum overcharge to all publishers and likely underestimating the damages to publishers that switch platforms. This can be clearly illustrated by the example Dr. Langer presents.
- (222) Dr. Langer says that “[i]n the as-is world, Assassin’s Creed has an average revenue share of █ percent, and Brawlhalla has an average revenue share of █ percent. Aggregating across games to the publisher level, Ubisoft pays approximately █ percent of its game revenues to Valve.”⁴⁷⁰ She then mischaracterizes my Opening Report by saying, “In the but-for world, Dr. Schwartz assumes that all of Ubisoft’s games either continue to make the same sales on Steam but at lower revenue shares (each declining by about █) or move to another platform

⁴⁶⁷ Ashley Langer, Dep. Tr., 6/21/2024, at 239:15–21.

This statement came after she claimed that the question was “not part of my report -- or my assignment” despite it being directly related to the criticisms I address above. See:

Ashley Langer, Dep. Tr., 6/21/2024, at 238:15–239:14.

⁴⁶⁸ Chiou Report, 5/17/2024, ¶ 364.

⁴⁶⁹ Langer Report, 5/17/2024, ¶ 139.

⁴⁷⁰ Langer Report, 5/17/2024, ¶ 142.

and pay the same, lower revenue share, yielding an average revenue share of about [REDACTED] percent for Ubisoft, implying harm.”⁴⁷¹ My analysis does not require this assumption.

- (223) Dr. Langer claims to provide examples that reflect the supposed flaw in my approach. In one example, she points out that “Ubisoft may have sold Assassin’s Creed on a Steam competitor that takes a 15 percent revenue share, meaning Ubisoft could be even better off in the but-for world.”⁴⁷² As she points out, using my damages method underestimates the overcharge in this example. It is likely that all of Steam’s competitors in the but-for world would be low fee competitors, as in this example. As an initial matter, Steam’s real-world fees are enabled and sustained by its exclusionary PMFN policy, which would not exist in the but-for world. Thus, an outcome in which a platform successfully implements *higher* fees than what Steam’s anticompetitive conduct enables it to realize in the real world is inconsistent with the but-for world that would prevail in the absence of Steam’s PMFN. More specifically, the PCM model shows that if there were high costs competitors who wanted to charge high platform fees, the PMFN would encourage them to enter in the real-world.⁴⁷³ The PMFN allows platforms to maintain a higher price, higher fee equilibrium than a competitive market. This benefits platforms that want to charge high fees. Any potential entrants of this type would be less likely to enter the market in the but-for world than in the real world. In the real world with the PMFN in place, all competing platforms currently have equal or lesser fees than Steam. This suggests, as I said in my initial report, that potential entrants who are encouraged to enter by the removal of the PMFN would charge lower platform fees than Steam.⁴⁷⁴ While Dr. Langer considers the possibility of a higher fee platform in the but-for world, she offers no evidence to support this purely speculative hypothetical scenario, and I am unaware of any such evidence. If a firm existed that could successfully implement a platform at a higher fee than Steam, they would not be hindered by the PMFN, and we would see them operating in the real world.

Lack of consideration of increased quantity sold

- (224) My estimate is conservative because I only consider the direct benefit from the change in platform fees. Removing the PMFN will drive down platform fees and consumer prices.⁴⁷⁵ As

⁴⁷¹ Langer Report, 5/17/2024, ¶ 142.

⁴⁷² Langer Report, 5/17/2024, ¶ 142.

⁴⁷³ Schwartz Report, 2/8/2024, ¶ 268.

⁴⁷⁴ Schwartz Report, 2/8/2024, ¶ 265–268.

⁴⁷⁵ Schwartz Report, 2/8/2024, ¶ 379.

a result of lower prices, more games overall will be sold.⁴⁷⁶ In addition to more games being sold, complementary goods sold by developers, *e.g.*, in game content, will increase in sales.⁴⁷⁷ The profit from these additional sales is realized in the but-for world; these profits could be added to overcharge damages. I do not account for any sales increases and thus conservatively focus only on the commission rate overcharge. This point also directly addresses some of Dr. Langer’s concerns with my pass-through estimate. While developers may pass through some of the decrease in fees to consumers via lower prices, those lower prices will translate into an increase in quantity sold and an increase in profits. My damages analysis does not account for this quantity effect and thus understates the actual damages suffered by publishers.

8.2.2. Parallel demand shift

- (225) As I explained in my Opening Report,⁴⁷⁸ my estimate is also conservative because I assume that the demand curve in the but-for world is parallel to the actual-world demand curve with the PMFN in place. Removing the PMFN would increase the elasticity of implied demand with respect to Steam fees. Without the PMFN in place, developers would be free to respond to Steam’s fees by raising prices on Steam alone. This means prices are more responsive to platform fees without the PMFN. Consumers respond to prices and so, by extension, consumers are more responsive to platform fees without the PMFN. This conclusion is directly supported by Boik and Corts, who state that “[t]he fundamental mechanism at work in raising fees and prices in our model is that PMFN agreements reduce the elasticity of implied demand for a platform when considering its fee[.]”⁴⁷⁹
- (226) An increase in elasticity would only increase the overcharge from the PMFN and, by extension, the overcharge damages. This can be seen explicitly in Appendix A.4 of my Opening Report where, as an example, I calculate the overcharge if the change in elasticity implied by my PCM

⁴⁷⁶ Mankiw, N. Gregory (2018), *Principles of Economics*, 8th ed., Boston, MA: Cengage Learning, at 67. (See the law of demand.)

⁴⁷⁷ Pindyck, Robert S. and Daniel L. Rubinfeld (2001), *Microeconomics*, 5th ed., Upper Saddle River, NJ: Prentice-Hall, Inc., at 22–23. (“Changes in the price of related goods also affect demand. . . . Goods are complements when an increase in the price of one leads to a decrease in the quantity demanded of the other. . . . [C]omputers and computer software are complementary goods. The price of computers has dropped dramatically over the past decade fueling an increase not only in purchases of computers but also purchases of software packages.”)

⁴⁷⁸ Schwartz Opening Report, 2/8/2024, ¶¶ 362–367.

⁴⁷⁹ Boik, Andre and Kenneth S. Corts (2016), “The Effects of Platform Most-Favored-Nation Clauses on Competition and Entry,” *The Journal of Law and Economics* 59(1): 105–134, at 118.

model is applied to my damages model.⁴⁸⁰ In this example, the slope of demand is halved (increasing elasticity along the linear demand curve) and the but-for fee is 15.47% rather than the 17.7% I find when I assume a parallel shift.

8.3. Steam’s but-for market share

8.3.1. My estimate of but-for shares considers a world without the alleged conduct

(227) Dr. Langer criticizes my use of data from 2008–2012 to form an estimate of the but-for world by stating “[Dr. Schwartz is] doing something that I find strange in taking publisher shares from ten years earlier and using them to think about platform shares from the but for world.”⁴⁸¹ Dr. Langer fundamentally misunderstands that the goal of a but-for analysis is not to consider a world where the alleged conduct is stopped today, but, instead, to consider a world where the alleged conduct never took place. As I have noted before, there is no clean period in which the PMFN did not exist that can be used as a benchmark for a but-for world.⁴⁸² Using data from 2008-2012 is the closest reasonable approximation of the state of the market absent the alleged conduct, which started as early as 2009. Using data from 2024 would benefit Valve as it would reflect a market with at least fifteen years of PMFN enforcement, and, more importantly, would not reflect a world without the anticompetitive effects flowing from the anticompetitive PMFN.

8.3.2. Damages are not sensitive to changes in Steam’s but-for market share

(228) Dr. Langer takes issue with my estimated but-for market share despite not presenting an alternative market share or affirmatively supporting any method with which to determine one.⁴⁸³ While I disagree with her criticism, damages are significant for a wide range of but-for market shares. My conclusion of significant damage to developers is not sensitive to but-for market shares.

⁴⁸⁰ Schwartz Opening Report, 2/8/2024, Appendix A.4.

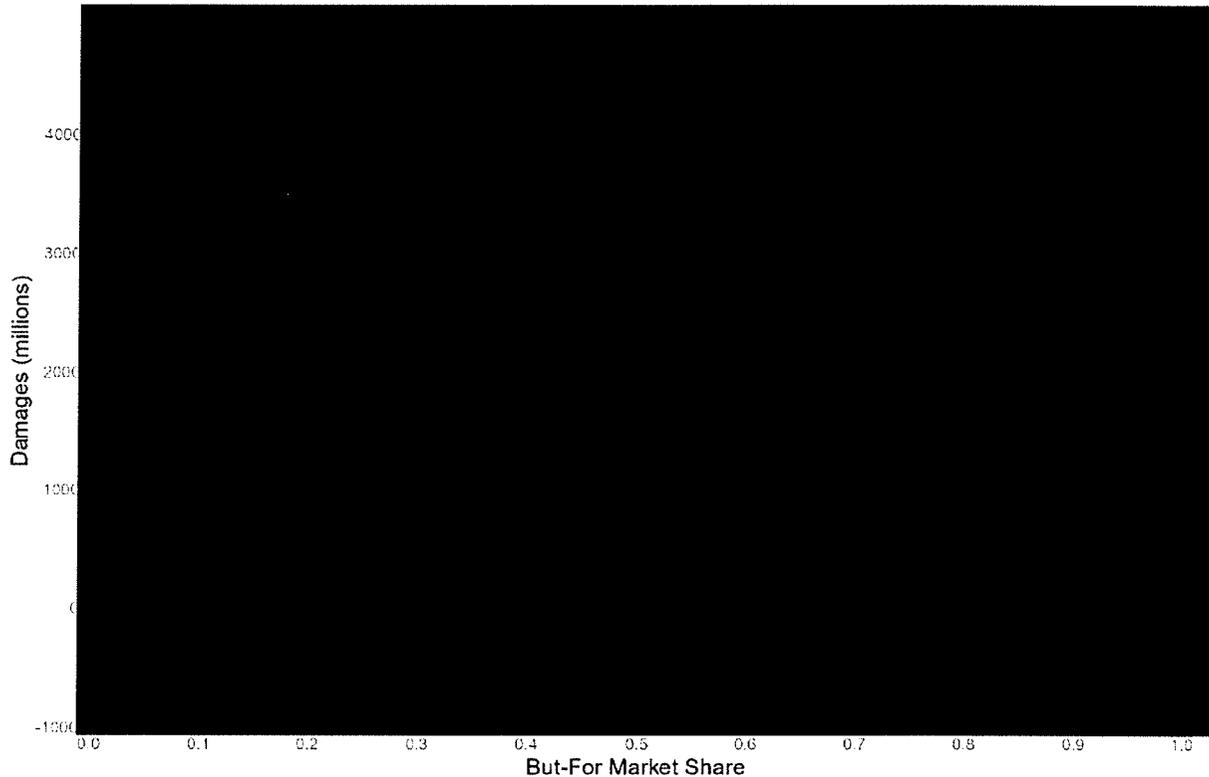
⁴⁸¹ Ashley Langer, Dep. Tr., 6/21/2024, at 85:11–86:4. (“... He’s doing something that I find strange in taking publisher shares from ten years earlier and using them to think about platform shares in the but-for world. . . .”)

⁴⁸² See, for example: Schwartz Opening Report, 2/8/2024, ¶ 302.

⁴⁸³ Langer Report, 5/17/2024, ¶ 79.

(229) Figure 6 below shows the minimum damages (using my high pass-through estimate), for a range of possible but-for shares. From the graph, it is clear that even at a but-for market share as high as [REDACTED] damages exceed \$1 billion.

Figure 6: Damages as a Function of Steam's But-For Share⁴⁸⁴



8.4. Pass-through analysis

(230) As a matter of economics, when marginal costs change for a manufacturer or seller of a good, a portion of that cost change can be passed through to customers. Pass-through is the dollar change in price divided by the dollar change in cost.⁴⁸⁵ In the context of a commission rate change, pass-through measures how much of the change in cost to a publisher from a change

⁴⁸⁴ See:

04_Damages_market_share_sensitivity.R
S_bf_sensitivity_dam_plot_sparse.png

⁴⁸⁵ Schwartz Opening Report, 2/8/2024, ¶¶ 380, 381.

See, also: Weyl, E. Glen and Michal Fabinger (2013), "Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition," *Journal of Political Economy* 121(3): 528–583, at 530–531, 551.

in the commission rate is passed on to the end consumer as a change in price charged. The goal of my pass-through analysis is to demonstrate how the available common evidence can be used to provide a reasonable estimate of a pass-through rate for the proposed class members. In my Opening Report, I estimate a pass-through rate by evaluating the average and median price responses of publishers to Steam's tiered commission rate change from 30% to 25%.⁴⁸⁶

- (231) As discussed in more detail below, economic theory predicts that a pass-through rate between 0% and 100% is likely in this case. The theoretical conditions in which one would expect pass-through outside this range represent specialized, extreme cases, the conditions for which are unlikely to be met here. However, contrary to Dr. Langer's misguided claims, even if the economic evidence could reasonably support a conclusion that an extreme pass-through rate was plausible (it does not!), the conclusion that there was harm to publishers and consumers from Valve's PMFN still stands. See Section 8.4.2.
- (232) Dr. Langer testified that she is not offering any affirmative opinion on an alternative approach to evaluate pass-through, and, thus, she offers no opinion on the pass-through rate.⁴⁸⁷ In critiquing my analysis, however, Dr. Langer mischaracterizes my analysis by framing it with an alternative interpretation that is inconsistent with economic principles and is, as a result, indefensible. Thus, in my view and contrary to her deposition testimony, Dr. Langer does offer her own version of a pass-through analysis, one that I unequivocally reject.

8.4.1. Pass-through analysis and conclusions are robust

- (233) Economists often make use of natural experiments to evaluate the impact of a change in an economic condition of interest.⁴⁸⁸ In the case of a pass-through analysis, an economic analysis would typically model price responses to a set of cost changes to determine how prices respond across a set of cost changes and, very often, a set of sellers. To evaluate pass-through related to a marginal cost change, one would ideally observe a random change in the marginal cost and evaluate the resulting change in price; in most markets, such cost and price changes happen regularly and robust data sets can be created to analyze pass-through. In this case,

⁴⁸⁶ Schwartz Opening Report, 2/8/2024, ¶¶ 390–396.

⁴⁸⁷ Ashley Langer, Dep. Tr., 6/21/2024, at 182:10–18. (“Q. Do you have an opinion one way or the other on whether a before-and-after analysis is available or unavailable here? A. I don't have an affirmative opinion on whether a before-and-after analysis is unavailable. As I've said a bunch of times, my assignment is to understand whether Dr. Schwartz's approaches make sense and not to provide an alternative approach that does make sense.”)

⁴⁸⁸ Schwartz Opening Report, 2/8/2024, ¶ 302.

Valve’s anticompetitive behavior constrains us to a more limited pass-through analysis and creates analytical challenges that my approach overcomes and Dr. Langer’s does not. In this case, we have only a single cost change that happened when Steam changed its commission rate structure. Steam’s commission rate change occurred when it introduced a tiered commission system in 2018.⁴⁸⁹ While Dr. Langer and I agree it is the only observed change in Steam’s commission rate,⁴⁹⁰ and is the best information available in the evidentiary record to assess pass-through, we agree on little else with respect to the pass-through analysis.

- (234) The data available to assess pass-through are limited in three crucial ways. First, as in virtually all cases involving real-world observational economic data (*i.e.*, data collected outside the context of a lab-controlled experiment), the data are noisy, *i.e.*, there are a variety of factors other than the commission rate change that could affect publishers’ pricing decisions and are not readily observable in the data used to analyze pass-through. It is, therefore, not possible to control for all factors that could influence the pricing decision by a given publisher with respect to a single game. That means it is difficult, if not impossible, without more data than are available currently to me or Dr. Langer, to interpret a price change for any single game (*i.e.*, to determine how much of the price change is attributable to the commission rate decrease (marginal cost change of interest)). Second, the impact of the tiered price structure was relatively limited. Steam distribution costs did not change for the overwhelming majority of games. Thus, there are relatively few observations available where the commission rate changed. As I explain below, my pass-through analysis helps minimize the bias that results from approaches like the one suggested by Dr. Langer. Third, the use of focal point pricing limits publishers’ pricing options to engage in pass-through. In my Opening Report, I explain why my approach is robust to publishers’ use of focal point pricing, a point that I develop further below.⁴⁹¹ Dr. Langer ignores focal point pricing completely.

Approach is robust given the noisy data

- (235) There is no doubt that individual game pricing data available in this case are noisy, as described above. Individual publishers ordinarily experience factors that influence their pricing decisions over time. Consider, for example, demand changes. A given game will likely

⁴⁸⁹ Schwartz Opening Report, 2/8/2024, ¶ 392.

⁴⁹⁰ Ashley Langer, Dep. Tr., 6/21/2024, at 205:18–206:1. (“Q. Okay. Are you aware of any other revenue share changes in the record other than introduction of Valve’s revenue tiers? A. I am not aware of any changes that Valve made to the revenue share of Steam, and yet that does not rule out that one could not recover estimates of pass-through in a reasonable way. But I am not aware of any -- any other revenue share changes that Valve made.”)

⁴⁹¹ Schwartz Opening Report, 2/8/2024, ¶ 393.

experience rises and declines in popularity over time that are likely to lead to higher or lower average prices, respectively, all else equal. These demand changes may follow from game age, the timing of updates, the introduction of new, similar games, the introduction of new DLC, and the like. It is likely that for some specific games (and perhaps many or most of them), those demand shifts roughly coincided with the introduction of Steam’s tiered commission structure. For example, a publisher may lower a game price because of the release of a close competitor around the same time that they cross the Steam commission fee tier threshold. Both changes are likely, all else equal, to lead to a price decrease. If one were to assume, as Dr. Langer does in her analysis, that all of the price decrease is the result of the commission change, that assumption is likely to be wrong because it ignores the impact of other factors that, as a matter of economics, one would expect to lead to price decreases as well.

- (236) It is highly unlikely that publishers will experience the same price influencing factors at the same time. It is highly unlikely that *all* games experience an increase in popularity (or conversely, *all* experience a decline in popularity) around the time of crossing the commission threshold.
- (237) In a situation like this, the individual game analysis that Dr. Langer proposes will be misleading and unreliable; there is no way to sort out, given the data in this case, the isolated impact of the commission rate change, and that is what matters for the pass-through analysis. Because of the inherent noisiness in the data, it would be misguided to calculate a single game’s price change during a window of time around when its commission rate was reduced, label it as an estimate of pass-through, and draw conclusions based on the single observation. Yet, this is precisely what Dr. Langer does in her report. Moreover, she mischaracterizes this as my approach, when it is clearly not what I do.⁴⁹² There is no meaningful interpretation that can be offered for changes in individual game prices. A proper analysis would proceed differently, in the way that mine did. In situations like this, economists routinely choose methods of estimating a parameter of interest (here, the impact of a commission savings) that reduces the influence these other factors have on the outcome variable (here, the observed

⁴⁹² Langer Report, 5/17/2024, ¶¶ 113–114, Exhibit 2. (“Exhibit 2 depicts Dr. Schwartz’s pass-through rate for each game in the sample of 124 games that he analyzes. . . . Dr. Schwartz estimates pass-through rates for 124 games that qualified for a reduced revenue share of 25 percent, did not subsequently qualify for a reduced revenue share of 20 percent, had revenues from at least 360 days before to 360 days after the revenue share change, and had pricing and transaction data available for at least 50 percent of the days in that 720-day window. See Schwartz Report, ¶¶ 392–394. Six games with pass-through rates lower than -200 percent and 14 games with pass-through rates higher than 200 percent are excluded from this exhibit.”)

change in price). My method of estimating pass-through, which considers both the sample average and median, does precisely this.⁴⁹³

- (238) In my Opening Report, I do not attempt to measure pass-through on a game-by-game basis, for the reasons outlined above. Instead, I estimate pass-through as the average or median price change response derived from 124 price-change observations.⁴⁹⁴ I demonstrate that common evidence can be used to provide a reasonable estimate of an expected pass-through rate from a lower commission cost. This approach is consistent with standard analytical techniques used in economics and statistics, as described above.
- (239) Dr. Langer’s approach (treating each game’s observed price change as an estimate of pass-through) leads to erroneous conclusions.⁴⁹⁵ Her results are highly sensitive to the noise in the data, something for which she has no controls. This is a fundamental, basic flaw in her analysis; it is well understood among economists that attempts to minimize the impact of the noise in the data should be explored and if that cannot be done, the analysis will not yield meaningful results. Dr. Langer makes no such attempt, and thus her approach fails as a matter of economics.
- (240) Consider the following: a game may have its base price change during the sample window for reasons unrelated to a change in commission. For instance, the game could be experiencing a demand decline, as described above, and the publisher may reduce its base price to increase quantity demanded. If the base price change is larger than what an equivalent 5% commission savings would represent, then the observed price change to commissions savings ratio would necessarily be greater than 100%. Under Dr. Langer’s approach, this would lead one to erroneously conclude that pass-through for the game is greater than 100% and that the publisher is not harmed by Valve’s supracompetitive commission rate, as Dr. Langer does in

⁴⁹³ It is well known that the sample average is the unique solution that minimizes the sum of squared deviations between an estimate and the observations in the sample, and the sample median is the unique solution that minimizes the sum of absolute deviations between an estimate and the observations in the sample. See:

Stavig, Gordon R. and Jean D. Gibbons (1977), “Comparing the Mean and Median as Measures of Centrality,” *International Statistical Review*, 45(1); 63–70, at 63. (“It is well known that (1) the mean minimizes the sum of the squares of the deviations around any point; this is considered an advantage of the mean, and (2) the median minimizes the sum of the absolute values of the deviations around any point; this is considered an advantage of the median.”)

In using an estimator that minimizes deviations (e.g., sample mean, sample median), I effectively help mitigate the impact other factors besides the commission change may have on publishers’ pricing decisions.

⁴⁹⁴ Schwartz Opening Report, 2/8/2024, ¶¶ 394–396.

⁴⁹⁵ See, e.g., Langer Report, 5/17/2024, ¶ 114. (“The 23 percent of games with 100 percent or more pass-through would not generate harm under Dr. Schwartz’s damages approach if he were to use individualized pass-through rates.”)

her report.⁴⁹⁶ In contrast, my approach is considerably more robust to outlier price changes that could result from changes in a game’s base price that are unrelated to the commission decline.⁴⁹⁷ Indeed, a review of prices for certain games that Dr. Langer erroneously concludes are not harmed by Valve’s anticompetitive conduct reveals this situation. Each of these games had a base price drop that did not coincide with its corresponding change in commission.⁴⁹⁸ Again, the noisiness found in these individual data points *does not* undercut the reliability of my approach, as the noise is expected to, on average, have roughly no impact on my bottom-line result. But the noise found in these individual data points shows why Langer’s alternative approach of calculating a game-by-game pass-through is not appropriate.

- a. [REDACTED]: Dropped its base price from \$39.99 to \$29.99 approximately 201 days prior to crossing the threshold for a commission tier change.⁴⁹⁹ Dr. Langer’s approach attributes the \$10 price drop to the commission change even though the price drop occurred over six months *before* the commission change. To put the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$2.⁵⁰⁰
- b. [REDACTED]: Dropped its base price from \$59.99 to \$39.99 approximately 83 days prior to crossing the threshold for a commission tier change. The game dropped its base price further to \$29.99 approximately 28 days prior to the commission change.⁵⁰¹ Dr. Langer’s approach attributes the \$30 price drop to the commission change even though the cumulative price drop occurred at distinct periods, each at least one month *before* the commission change. To put the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$3.⁵⁰²
- c. [REDACTED]: Dropped its base price from \$59.99 to \$29.99 approximately 58 days after crossing the threshold for a commission tier change.⁵⁰³ Dr. Langer’s approach attributes the \$30 price drop to the commission change even though the price drop occurred approximately two months *after* the commission change. To put

⁴⁹⁶ Langer Report, 5/17/2024, ¶ 114. (“The 23 percent of games with 100 percent or more pass-through would not generate harm under Dr. Schwartz’s damages approach if he were to use individualized pass-through rates.”)

⁴⁹⁷ Schwartz Opening Report, 2/8/2024, ¶¶ 394–396.

⁴⁹⁸ See Reply Attachment E-5.

⁴⁹⁹ See Reply Attachment E-5.

⁵⁰⁰ $\$39.99 \times .05 = \1.9995 .

⁵⁰¹ See Reply Attachment E-5.

⁵⁰² $\$59.99 \times .05 = \2.9995 .

⁵⁰³ See Reply Attachment E-5.

the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$3.⁵⁰⁴

- d. [REDACTED]: Dropped its base price from \$59.99 to \$49.99 approximately 118 days prior to crossing the threshold for a commission tier change.⁵⁰⁵ Dr. Langer’s approach attributes the \$10 price drop to the commission change even though the price drop occurred approximately four months *before* the commission change. To put the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$3.⁵⁰⁶
- e. [REDACTED]: Dropped its base price from \$49.99 to \$34.99 approximately 225 days prior to crossing the threshold for a commission tier change.⁵⁰⁷ Dr. Langer’s approach attributes the \$15 price drop to the commission change even though the price drop occurred over seven months *before* the commission change. To put the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$2.50.⁵⁰⁸
- f. [REDACTED]: Dropped its base price from \$39.99 to \$29.99 approximately 55 days after crossing the threshold for a commission tier change. Dropped its base price further to \$19.99 approximately 194 days after crossing the threshold for a commission tier change.⁵⁰⁹ Dr. Langer’s approach attributes the entire \$20 price drop to the commission change even though the cumulative price drop occurred at distinct periods, both of which were months *after* the commission change. To put the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$2.⁵¹⁰
- g. [REDACTED]: Dropped its base price from \$59.99 to \$49.99 approximately 70 days prior to crossing the threshold for a commission tier change.⁵¹¹ Dr. Langer’s approach attributes the \$10 price drop to the commission change even though the price drop occurred more than two months *before* the commission change. To put the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$3.⁵¹²

504 $\$59.99 \times .05 = \$2.9995.$

505 See Reply Attachment E-5.

506 $\$59.99 \times .05 = \$2.9995.$

507 See Reply Attachment E-5.

508 $\$49.99 \times .05 = \$2.4995.$

509 See Reply Attachment E-5.

510 $\$39.99 \times .05 = \$1.9995.$

511 See Reply Attachment E-5.

512 $\$59.99 \times .05 = \$2.9995.$

- h. [REDACTED]: Dropped its base price from \$59.99 to \$49.99 approximately 122 days prior to crossing the threshold for a commission tier change.⁵¹³ Dr. Langer attributes the \$10 price drop to the commission change even though the price drop occurred approximately 4 months *before* the commission change. To put the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$3.⁵¹⁴
- i. [REDACTED]: Dropped its base price from \$59.99 to \$39.99 approximately 289 days prior to crossing the threshold for a commission tier change. Dropped its base price further to \$24.99 approximately 24 days prior to the commission change. Dropped its base price further to \$19.99 approximately 183 days after the commission change.⁵¹⁵ Dr. Langer’s approach attributes the entire \$40 price drop to the commission change even though the cumulative price drop occurred at distinct periods, each of which was at least approximately one month removed from the commission change. To put the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$3.⁵¹⁶
- j. [REDACTED]: Dropped its base price from \$59.99 to \$39.99 approximately 133 days prior to crossing the threshold for a commission tier change. Dr. Langer’s approach attributes the \$20 price drop to the commission change even though the price drop occurred more than four months *before* the commission change. To put the price change in context with the potential commissions savings, a 5% commission savings on the original base price would represent approximately \$3.⁵¹⁷

(241) As another example, a game in my sample may experience relatively more Steam Sales days in the period after the commission change than before. The timing of Steam Sales days has nothing to do with a particular game’s crossing of a commission tier, but if a particular game in my sample has a disproportionate number of Steam Sales days after crossing the commission threshold, this could lead to a price change observation that reflects both the impact from a commission change and the greater prevalence of Steam-sponsored sales dates in the post-commission drop period. Under Dr. Langer’s approach, one could erroneously conclude that pass-through for the game is greater than 100% even if the price change was largely attributable to the higher prevalence of Steam Sales days in the post-period. Indeed, the games [REDACTED], and [REDACTED] had observed price changes to cost savings ratios exceeding 100% and a disproportionate number of Steam Sales

⁵¹³ See Reply Attachment E-5.

⁵¹⁴ $\$59.99 \times .05 = \2.9995 .

⁵¹⁵ See Reply Attachment E-5.

⁵¹⁶ $\$59.99 \times .05 = \2.9995 .

⁵¹⁷ $\$59.99 \times .05 = \2.9995 .

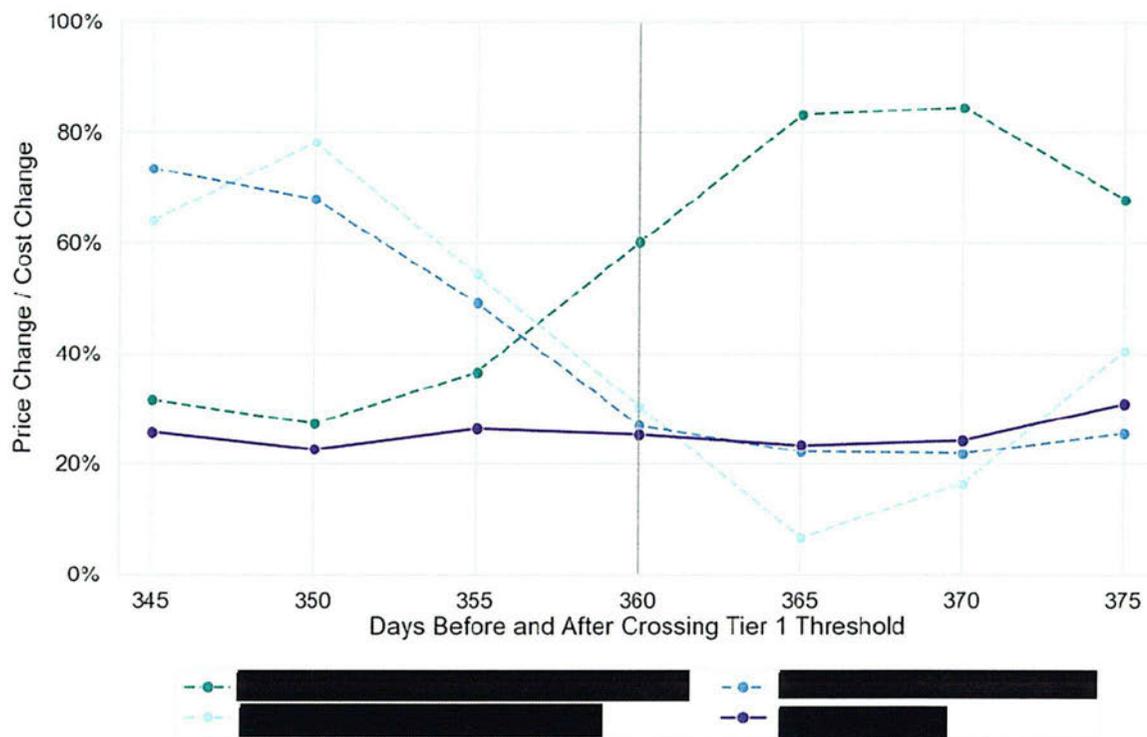
days in the post-commission change period in my sample (20 pre vs. 42 post, 33 pre vs. 42 post, and 38 pre vs. 50 post, respectively).⁵¹⁸ My analysis is robust to such instances.

(242) Consider a time window around which a game experienced a commission-rate reduction and the corresponding price change for the game during that window. I used a 360-day window prior to and after the commission rate change to account for potential seasonality in Steam Sales events. That said, other time windows also make economic sense. My results are stable around the size of that time window. Dr. Langer's results are not. Dr. Langer's approach is highly sensitive to the time window used. At the individual game level, the choice of time window influences the observed price change substantially, which can be seen in Figure 7 below.⁵¹⁹

⁵¹⁸ See: 01_Passthrough_analysis_script.ipynb.

⁵¹⁹ See: 01_Passthrough_analysis_script.ipynb.

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Figure 7: Observed Price Changes with Different Time Intervals

(243) My approach is considerably more robust and consistent with sound economic principles applicable to empirical analysis than Dr. Langer’s. The evidence suggests that across games, factors that may influence price (*e.g.*, demand shifts) are not correlated. Different games are at different stages in their product version life cycle, face different degrees of competition, and so forth. However, in my sample, *all* games do experience a marginal cost decrease via a commission rate reduction. In that case, a preferred approach to analyzing pass-through would be to look at either average or median price changes across all games, since such measures will reflect pricing impacts that are correlated across the games in the sample (in this case, the commission reduction). While the other factors that may influence price are happening, the noise they can create in the data is suppressed when the data are analyzed this way because these factors are uncorrelated across games.

Approach is reasonable despite limited data availability

(244) As mentioned above, the price change data in this case are limited because there are relatively few occurrences in which publisher commissions were actually reduced on Steam. My

analytical approach is reasonable given these data limitations. Moreover, my analysis can easily be updated to account for any additional data that may become available to me.

(245) Dr. Langer suggests that I have not proposed a class-wide methodology for assessing pass-through; she argues doing so would require individualized inquiry with data sufficient for estimating game- and publisher-specific pass-through.⁵²⁰ Dr. Langer’s assessment is incorrect. Her conclusions are based on flawed reasoning and a misunderstanding of my analysis. Presumably, when she claims the data are insufficient to enable game- or publisher-specific pass-through, she means that there are relatively few instances of a commission change available in the data. Dr. Langer neglects to consider the impact of Valve’s anticompetitive conduct and ignores the fact that the key reason that commission change data are limited is because of Valve’s enforcement of a PMFN and its commission structure.⁵²¹ She also fails to recognize that the tiered commission structure is more of an illusion than an actual commission change. That structure is designed to offer no benefit to the large proportion of developers whose games sell less than \$10 million and only limited benefits to the rest. Thus, publishers have realized commission rate reductions only on a relatively small number of games.⁵²² Similarly, cross-platform pricing comparisons are tainted by Valve’s PMFN, which precludes publishers from offering lower prices on platforms that offer lower commissions than Steam. Thus, Dr. Langer’s “data availability” critique fails because a robust analysis can be completed with the data available and, moreover, to the extent that there are only a relatively small number of games that have experienced a reduced commission rate, that is the result of Valve’s anticompetitive behavior.

⁵²⁰ Langer Report, 5/17/2024, ¶¶ 105, 116, 158. (“Dr. Schwartz’s own method for estimating pass-through yields substantial variation in the pass-through rates across the small share of publishers for which he has data to estimate pass-through. This variation is to be expected given the substantial differences in consumers, games, and publishers. By contrast, Dr. Schwartz assumes that the pass-through rate is the same for all publishers on Steam because he lacks the necessary data to determine game-specific and publisher-specific pass-through for any proposed class members beyond the 124 games (or 0.14 percent of the more than 90,000 titles on Steam, and corresponding to only 108 publishers) that he examined.”) (“First, Dr. Schwartz’s methodology to estimate pass-through cannot be used to estimate pass-through for each developer, publisher, and game. . . . He has not put forth any methodology to estimate the pass-through rate of the remaining 99+ percent of games sold on Steam. He has proposed no class-wide methodology.”) (“I stress that Dr. Schwartz cannot perform a similar procedure for all games and publishers, as those data do not exist and would require individualized inquiry.”)

⁵²¹ To be sure, I reject Dr. Langer’s claim that the data available, limited as they may be, are insufficient for providing a reasonable estimate of pass-through in this case.

⁵²² See Schwartz Opening Report, 2/8/2024, § 7.4.

Approach is robust to prevalence of focal point pricing

- (246) As I explained in my Opening Report, the use of focal point pricing (*e.g.*, prices that end in .99) constrains how a publisher may pass through a commission savings by limiting the set of prices the publisher may consider.⁵²³ When focal point pricing is used, publishers may wish to maintain the same base price for a game and instead opt to offer more frequent, longer-duration, and/or larger discounts to consumers.⁵²⁴ An estimate of pass-through in this context should account for the widespread use of focal point pricing. My approach does so by considering changes in average pricing over a relatively long duration of time so that publishers’ use of promotional activities and discounting to engage in pass-through is accounted for.
- (247) My pass-through analysis is also reasonable because, in important ways, the sample and the population look the same. Most importantly, price patterns and levels for the sample closely align with the population as a whole. The price levels observed for the games in my sample—before and after the commission rate change—are in the same cluster as for the general population of publisher/game pairs. Because focal point pricing is pervasive,⁵²⁵ despite there being over 50,000 publishers and nearly 100,000 games on Steam,⁵²⁶ over █████ of revenue transacted on Steam between 2018 and 2022 occurred at only 25 distinct base prices.⁵²⁷ Additionally, the similarity in pricing used across members of the class supports my approach of estimating an expected pass-through rate to apply class-wide, as demonstrated below.
- (248) For the 124 games in my sample, I construct a set of base prices and sale prices associated with each of those games for the time period for which they are used in my pass-through analysis. I collect the corresponding base prices and sales prices across all games in my sample, yielding 21 base prices (the “Base Price Set”) and 422 sale prices (the “Sale Price Set”). See Reply Attachments E-2, E-3, and E-4.
- (249) I compare the Base Price Set and Sale Price Set to base prices and sales prices, respectively, associated with all game transactions on Steam between 2018 and 2022. For each game purchase transaction on Steam, there is an associated base price and sale price. Thus, I can

⁵²³ Schwartz Opening Report, 2/8/2024, ¶¶ 386–389.

⁵²⁴ Schwartz Opening Report, 2/8/2024, ¶ 389.

⁵²⁵ Schwartz Opening Report, 2/8/2024, ¶¶ 386–389.

⁵²⁶ See Schwartz Opening Report, 2/8/2024, ¶ 207.

⁵²⁷ See Reply Attachment E-1.

compare the pricing behavior of the publishers in my pass-through analysis. I conclude that the prices used by publishers in my sample are highly consistent with the pricing used by class members more generally.

(250) Approximately [REDACTED] of game transaction revenue on Steam between 2018 and 2022 was associated with a base price that is in the Base Price Set.⁵²⁸ Further, approximately [REDACTED] of game transaction revenue on Steam between 2018 and 2022 was associated with a sale price that is in the Sale Price Set, with the most common 25 sales prices accounting for nearly [REDACTED] of game transaction revenue.⁵²⁹ In other words, the price points used by the games in my pass-through sample are highly representative of game prices on Steam more generally, and there is a [REDACTED] proportion of game revenue associated with relatively few prices. In assessing pass-through, this clustering of prices is important, and Dr. Langer ignores it entirely.

(251) In fact, Dr. Langer disregards focal point pricing completely in her report. She testified that evaluating focal point pricing was not part of her assignment and she has no opinions regarding focal point pricing.⁵³⁰ As a consequence, Dr. Langer disregards the empirical realities of how prices are being set on Steam. Rather, she offers largely misguided anecdotes to support her opinion that individualized inquiry is needed to evaluate pass-through.⁵³¹ Her anecdotes are neither relevant nor consistent with the actual pricing data that has been produced in this case. Dr. Langer’s critiques hinge on contrived examples that are not supported by any appropriate empirical analysis. Her claims that individualized inquiry is needed remains an unsubstantiated assertion.

⁵²⁸ See Reply Attachment E-4.

The prices in the Base Price Set are: \$59.99, \$19.99, \$39.99, \$29.99, \$24.99, \$14.99, \$49.99, \$9.99, \$34.99, \$44.99, \$69.99, \$12.99, \$79.99, \$17.99, \$89.99, \$30.00, \$16.99, \$2.99, \$0.99, \$74.99, and \$20.00. See Reply Attachment E-2.

⁵²⁹ See Reply Attachment E-4.

As can be seen on Attachment E-3, the sum of total game revenue associated with the top 25 sales prices is approximately [REDACTED], and total game revenue over the 2018–2022 period was approximately [REDACTED] as shown in Reply Attachment E-4. [REDACTED]

The top 25 sale prices used (in terms of game revenue) are: \$19.99, \$59.99, \$29.99, \$39.99, \$14.99, \$9.99, \$24.99, \$49.99, \$4.99, \$17.99, \$15.99, \$11.99, \$13.99, \$34.99, \$23.99, \$7.49, \$44.99, \$8.99, \$7.99, \$22.49, \$69.99, \$19.79, \$5.99, \$26.99, \$35.99. See Reply Attachment E-3.

⁵³⁰ Ashley Langer, Dep. Tr., 6/21/2024, at 206:22–207:12.

During her deposition, Dr. Langer describes focal point pricing as publishers’ desire to offer similar pricing across different platforms/storefronts since customers may get upset if a game were offered at different prices on different platforms (See Ashley Langer, Dep. Tr., 6/21/2024, at 206:10–21.). Dr. Langer appears to have confused focal point pricing with Valve’s proffered justification for enforcing its PMFN.

⁵³¹ See, e.g., Langer Report, 5/17/2024, ¶¶ 107–112.

8.4.2. Economic theory indicates pass-through is likely between 0% and 100%

- (252) Dr. Langer relies on anecdotal evidence to suggest individualized inquiry is necessary to assess pass-through.⁵³² She does not engage with the theoretical conditions under which one would expect pass-through rates as extreme as she proffers. Although data surrounding price changes can be noisy, my analysis indicates a pass-through rate of approximately 25%. That result is robust. It is also unsurprising; economic theory predicts a true pass-through of a marginal cost decrease in this market would be greater than 0% and less than 100%. In my Opening Report, I pointed out that the economic literature typically focuses on five factors that influence pass-through, including the level of competition in the relevant product market, the relative slopes of the demand and supply curves, as well as the shapes of the demand and supply curves.⁵³³ These five factors are addressed briefly here.
- (253) First, the marginal cost of supplying one additional online game is low and constant for developers (that is the cost of supplying one *Call of Duty* game is equal to the cost of providing the second copy, and so forth), allowing me to simplify the model of pass-through by assuming a constant marginal cost curve.⁵³⁴ The literature notes that market-wide pass-through approaches 100% as a product market becomes more homogeneous and perfectly competitive (*not* the case in this market), although firm-specific pass-through from a firm-specific price

⁵³² See, e.g., Langer Report, 5/17/2024, ¶ 110. (“For example, consider Warner Bros. Games, the publisher of *Hogwarts Legacy*. Warner Bros. Games is the only gaming company with the rights to bring author J.K. Rowling’s *Harry Potter* novel series to video games. When it released *Hogwarts Legacy* in February 2023, fans put a collective 267 million hours into the game in under three weeks. Contrast Warner Bros. Games’ incentives with Devolver Digital’s, the publisher of *Wizard with a Gun*. Whereas *Hogwarts Legacy* draws on a base of dedicated *Harry Potter* fans willing to pay high prices to experience an immersive adventure in a unique fictional universe, *Wizard with a Gun* caters to a broader and more casual audience that has many alternative options for faced-paced, multiplayer shooter games. As a result, Warner Bros. Games may be able to pass on cost increases to consumers in the form of higher prices with minimal loss to overall sales, whereas Devolver Digital may lose many customers if it made a similar price change. However, Dr. Schwartz’s model assumes that both publishers would view their audiences as equally likely to forego a purchase in the face of a similar price increase—a clear departure from reality.”)

⁵³³ Schwartz Opening Report, 2/8/2024, ¶¶ 382, 383. See, also:
Weyl, E. Glen and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition,” *Journal of Political Economy* 121(3): 528–583, at 530–531, 551.

⁵³⁴ This is, in fact, what many theoretical economic studies do. For example, see:
RBB Economics, “Cost Pass-Through: Theory, Measurement, and Potential Policy Implications,” 2/2014, at 58, available at: https://assets.publishing.service.gov.uk/media/5a74a3a940f0b619c86593b8/Cost_Pass-Through_Report.pdf.
Assuming a constant marginal cost curve is conservative, as an upward sloping marginal cost curve reduces predicted pass-through. For more information on this, see:
RBB Economics, “Cost Pass-Through: Theory, Measurement, and Potential Policy Implications,” 2/2014, at 64, available at: https://assets.publishing.service.gov.uk/media/5a74a3a940f0b619c86593b8/Cost_Pass-Through_Report.pdf.

change is 0% in this setting.⁵³⁵ The theoretical models predict a range of possible pass-through rates, all between 0% and 100%, in markets that are not perfectly competitive. In imperfectly competitive markets, firms face downward sloping demand curves and operate on the elastic part of their demand curves.⁵³⁶ As Dr. Langer notes, producers pass through less of a price increase to consumers when the demand curve is more elastic, as consumers are more price sensitive.⁵³⁷ Nonetheless, when firms experience a marginal cost decrease and when they operate on the elastic part of their demand curves, as they do in the online PC gaming market, firms have an incentive to pass through at least some portion of the cost decrease to consumers due to the disproportionate increase in quantity demanded in response to a price decrease.⁵³⁸ This implies pass-through rates of greater than 0%.⁵³⁹

(254) The implication of pass-through rates between 0% and 100% is that all proposed class members incur at least some harm from the supracompetitive overcharge only. Thus, there is no need for individualized inquiry to establish common harm. For example, suppose that there are two class members, Publisher A and Publisher B, respectively, who each offer games on Steam at a price of \$100 each. If each publisher’s game earned less than \$10 million in

⁵³⁵ RBB Economics, “Cost Pass-Through: Theory, Measurement, and Potential Policy Implications,” 2/2014, at 77, available at: https://assets.publishing.service.gov.uk/media/5a74a3a940f0b619c86593b8/Cost_Pass-Through_Report.pdf.

See also:

Weyl, E. Glen and Michal Fabinger (2013), “Pass-Through as an Economic Tool: Principles of Incidence Under Imperfect Competition,” *Journal of Political Economy* 121(3): 528–583, at 549.

Häckner, Jonas and Mathias Herzing (2016), “Welfare Effects of Taxation in Oligopolistic Markets,” *Journal of Economic Theory* 163: 141–166, at 147.

⁵³⁶ Indeed, it is profit-maximizing for any firm to operate on the elastic part of its demand curve. See:

Varian, H.R. (2014), *Intermediate Microeconomics: A Modern Approach*, 9th ed., New York, NY: W. W. Norton and Company, at 282. (“Suppose that you were in charge of setting a price for some product that you were producing and that you had a good estimate of the demand curve for that product. Let us suppose that your goal is to set a price that maximizes profits—revenue minus costs. Then you would never want to set it where the elasticity of demand was less than 1—you would never want to set a price where demand was inelastic. Why? Consider what would happen if you raised your price. Then your revenues would increase—since demand was inelastic—and the quantity you were selling would decrease. But if the quantity sold decreases, then your production costs must also decrease, or at least, they can’t increase. So your overall profit must rise, which shows that operating at an inelastic part of the demand curve cannot yield maximal profits.”)

⁵³⁷ Langer Report, 5/17/2024, ¶ 108. (“Economists often use the term “price elasticity of demand” to describe the extent to which consumers will switch away from purchasing a product as the product’s price rises. Some publishers may enjoy a dedicated set of consumers who are likely to buy the game even at very high prices. These publishers can increase their prices without losing many consumers. Therefore, when their costs rise, these publishers will be able to increase their prices (i.e., “pass through” cost increases) to customers.”)

⁵³⁸ Varian, H.R. (2014), *Intermediate Microeconomics: A Modern Approach*, 9th ed., New York, NY: W. W. Norton and Company, at 276. (“An elastic demand curve is one for which the quantity demanded is very responsive to price: if you increase the price by 1 percent, the quantity demanded decreases by more than 1 percent.”)

⁵³⁹ Negative pass-through rates are unlikely, as it is unclear why a profit-maximizing firm would increase price in response to a cost decrease, all else equal.

total revenue, under Steam’s current commission rate structure, the commission charge is \$30 and each publisher keeps \$70. In the but-for world, the commission rate is 18%.⁵⁴⁰ If Publisher A passes through 1% of cost savings to consumers, it sets a game price of \$99.88.⁵⁴¹ If Publisher B passes through 99% of cost savings to consumers, its game price will be \$88.12.⁵⁴² Publisher A earns \$81.90 with each game sale, while Publisher B earns \$72.26 with each game sale.⁵⁴³ Consequently, reducing the commission rate from 30% to 18% allowed Publisher A to earn \$11.90 more per game sale and Publisher B to earn \$2.26 more per game sale.⁵⁴⁴ Both publishers were harmed, and even if there are differences in the individual pass-through rates, the harm is clear from the fact of the overcharge. Individualized inquiry is not necessary to establish that proposed class members suffer common harm from a higher take rate when pass-through lies between 0% and 100%.

- (255) The overcharge analysis, in fact, understates the harm suffered by class members. In fact, economic harm extends beyond Valve’s overcharge. Even if pass-through is, as Dr. Langer suggests, greater than 100% for certain class members, those class members are still harmed. A review of the underlying economic principles makes this clear and demonstrates Dr. Langer’s error.
- (256) When the commission rate decreases, there is a decrease in a publisher’s marginal cost. Regardless of how a publisher chooses to adjust its price in light of these cost savings, lower costs benefit all publishers. The idea put forth by Dr. Langer is that publishers would not benefit from lower costs, which defies economic reasoning. The reason Dr. Langer’s conclusion is wrong, as a matter of economics, is that she ignores the quantity and profit effects of a decrease in marginal cost. When marginal cost falls due to a commission rate change, a publisher can maintain the same game price and sales as before, all else equal, or decrease its game price to attract more customers. In the first case, the publisher maintains

⁵⁴⁰ Schwartz Opening Report, 2/8/2024, ¶ 377.

⁵⁴¹ $30\% - 18\% = 12\%$.

Cost savings = $0.12 * \$100 = \12 . 1% of cost savings is \$0.12. If Publisher A passes through 1% of cost savings to the consumer, it will set a new game price of $\$100 - \$0.12 = \$99.88$.

⁵⁴² Cost savings = $0.12 * \$100 = \12 . 99% of cost savings is \$11.88. If Publisher B passes through 99% of cost savings to the consumer, it will set a new game price of $\$100 - \$11.88 = \$88.12$.

⁵⁴³ With a commission rate of 18%, each publisher receives 82% of its new game sale price. Thus, Publisher A earns $0.82 * \$99.88 = \81.90 , while Publisher B earns $0.82 * \$88.12 = \72.26 .

⁵⁴⁴ Publishers A and B both earned \$70 with each game sale under the 30% commission rate. Under the lower commission rate, Publisher A earns $\$81.90 - \$70 = \$11.90$ more with each game sale and Publisher B earns $\$72.26 - \$70 = \$2.26$ more with each game sale.

the same price and sales and earns more profit per game than it did before the commission rate change, all else equal. In other words, the publisher could do nothing to its price/output decisions and be better off simply because its costs have decreased. That developer will have been harmed by the overcharge.

- (257) In the second case, in response to the decrease in marginal cost, the developer lowers its game price to attract more customers (because it faces a downward sloping demand curve) and thus can earn greater profits through the cost savings and the increased output. Because the developer operates in the elastic portion of the demand curve, a decrease in price leads to a correspondingly greater increase in sales and, thus, total revenue, meaning the price decrease increases profits.
- (258) Consider, now, Dr. Langer's scenario. She argues that if pass-through is greater than 100%, the developer is not harmed. To see why that conclusion is wrong, consider the case in which the developer lowers its game price by more than the change in cost (*i.e.*, has pass-through greater than 100%). If the developer does that, it has to believe that the quantity response from the large decrease in price will exceed the impact of the lower price. Because it operates on the elastic portion of its demand curve, decreasing the game price by that amount generates more profit than not changing price at all. In other words, if the publisher engages in pass-through of greater than 100%, it will be the profit-maximizing choice for the publisher. In particular, it is profit-enhancing for that developer relative to keeping price/quantity unchanged, even after the commission rate decrease. Most important, however, is that in both of these cases, the developer is harmed as a result of the overcharge, regardless of its pass-through behavior. Dr. Langer's game-by-game pass-through analysis is flawed, for all of the reasons set forth above. But, even if I ignore those flaws, her pass-through analysis still supports a conclusion that all class members are harmed.



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Reply Attachment A-1

July 2024

Steven Schwartz, Ph.D.
Managing Director

Dr. Steven Schwartz is a Managing Director at Intensity, LLC. With extensive experience in economic consulting, he has been retained as an economic expert in numerous litigation and non-litigation matters and has provided testimony before the U.S. International Trade Commission and the U.S. Tax Court, federal and state courts.

Dr. Schwartz has over 35 years of economic consulting experience and has applied his expertise in high-stakes disputes related to commercial success, irreparable harm, lost profits, reasonable royalties, economic domestic industry considerations, and unjust enrichment. His areas of expertise include:

- Antitrust and Competition
- Intellectual Property Damages and Valuation
- Damages Assessment in Complex Commercial Disputes
- Class Certification
- Securities and Finance Litigation

Examples of Dr. Schwartz work include:

- Analysis of liability and damages in several antitrust cases involving allegations brought under Walker Process.
- Analysis of liability and damages issues in a major antitrust case involving a large economic platform in which the allegations accused the platform of monopolizing the market for app distribution within its ecosystem and tying app distribution to payment processing for in app payments.
- Analysis of pricing behavior by a company that pled guilty to price fixing as a part of a larger conspiracy to determine the impact on the firm and to assess the portion of its price increases attributable to the conspiracy as opposed to non-collusive factors such as cost increases.
- Assessment to the damages suffered by a residential home builder and land developer as a result of alleged breaches of contracts and fraud by another home builder. The analysis included a determination of the number of homes the Plaintiff would have built and sold in the absence of the alleged breaches and fraud, as well as the losses the firm would incur as it attempted to re-enter the market, post-fraud.
- Analysis of the commercial success of a branded drug in the context of a Hatch-Waxman dispute; the branded drug was a late entrant into the market, i.e., after the entry of competitors selling generic versions of first and second-generation drugs, and Dr.

Schwartz provided an assessment of the drug's performance and success in the context of a market dominated by generic competitors.

- Analyzed the damages suffered by an aircraft manufacturer as a result of a patent infringement by a rival manufacturer of a component of the aircraft at issue. The royalty analysis considered the appropriate royalty in a case in which the infringing product was never sold.

Dr. Schwartz's consulting background spans many industries, such as hospitality, consumer goods, electronics, gaming, and pharmaceuticals, among others. He has also consulted in a variety of business, valuation and strategic planning issues.

Education

Ph.D., Economics, University of Maryland

M.A., Economics, University of Maryland

B.A., Economics, Wesleyan University

Professional Experience

Intensity, LLC. Managing Director, 2021 to present.

Charles River Associates, Vice President, 2015 to 2020.

Alvarez & Marsal, Global Forensic and Dispute Services, Managing Director, 2011 to 2015.

NERA Economic Consulting, Senior Vice President (Final Position), 1984 to 2011.

Miami University, Assistant Professor of Economics, 1980 to 1984.

Federal Trade Commission, Economist, 1979 to 1980.

Publications and Papers

"An Overview of Market Definition in the 2023 Merger Guidelines" with Jason Albert, Jessica Dutra, Richard Manning, Anushree Subramaniam, Wei Tan, Pablo Varas and Keith Waehrer, *Secretariat Client Alert* available at <https://secretariat-intl.com/insights/an-overview-of-market-definition-in-the-2023-merger-guidelines/>, December 2023 (update to July 2023 version).

"An Overview of Market Definition in the Draft Merger Guidelines" with Jason Albert, Jessica Dutra, Richard Manning, Anushree Subramaniam, Wei Tan, Pablo Varas and Keith Waehrer, *Secretariat Client Alert* available at <https://secretariat-intl.com/insights/an-overview-of-market-definition-in-the-draft-merger-guidelines/>, July 2023.

"The Use of Econometric and Statistical Analysis in Damages" with Jennifer Vanderhart, Richard Brady and Aminta Raffalovich, *The Guide to Damages in International Arbitration-Fifth Edition*, available at <https://globalarbitrationreview.com/guide/the-guide-damages-in-international-arbitration/5th-edition>, December 2022. (Update forthcoming)

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"Antitrust Analysis of FRAND Licensing Post-FTC v. Qualcomm," *The Journal of the Antitrust and Unfair Competition Section of the California Lawyers Association*, Volume 31, No. 1, Spring 2021 (with Aminta Raffalovich).

"Pricing Challenges for Hotels in a Price Parity World." *The Price Point*, Volume 17, Issue 2, Spring 2017.

Speaking Engagements

Panelist, "Big Tech Cases" Informa Antitrust West Coast 2024, May 2024.

"Don't Squat on Your Spurs: Ethical Issues in Class Actions Involving Injury and Experts" American Bar Association Class Action Institute, April 13, 2022.

"What Can You Prove with Statistical Evidence, or How Do I Know if All Those Numbers Are Good or Bad", ABA Webinar Series, March 14, 2022.

"Valuing Intellectual Property in the Case of Free-to-Consumer Goods, Webinar, April 6, 2021, and June 29, 2021.

Panelist, "Cyber Breach Aftermath: Civil Litigation, Insurance Risks and SEC Perspective", American Bar Association Annual Meeting, Chicago, IL, August 2, 2018.

"Dealing with a Breach's Long-Term Fallout" *Corporate Counsel*, March 2018.

Panel Presentation "Cyber Breach Aftermath: Civil Litigation, Insurance Claims and Regulatory Perspective" Association of Corporate Counsel CLE Program, Chicago, IL, January 2018.

Presentation to McGuire Woods LLP, Dallas, TX, August 8, 2017.

Public Symposium, Developments in Trade Secret Protection, sponsored by United States Patent

and Trademark Office, Washington, D.C., May 8, 2017.

Testimony and Affidavits

1. Deposition Testimony in *Provisur Technologies, Inc. v. Weber, Inc. and Weber Food Technology GmbH*, United States District Court for the Western District of Missouri (St. Joseph Division), Case No. 5:21-cv-06113, June 2024. [Weber Inc. and Weber Food Technology GmbH]
2. Deposition Testimony in *In Re: Valve Antitrust Litigation*, United States District Court for the Western District of Washington at Seattle, Case No. 2:21-cv-00563-JCC, April 2024. [Plaintiff Class of Video Game Developers]
3. Deposition Testimony in *Gerald Hayden v. International Business Machines Corporation, Pablo Suarez and Shankar Ramamurthy*, United States District Court for the Southern District of New York, Case No. 7:210CV-02485-VB, March 2024. [Gerald Hayden]
4. Deposition Testimony in *Apple, Inc. v. Masimo Corporation and Sound United, LLC and Masimo Corporation and Ceracor Laboratories, Inc. v. Apple, Inc.*, United States District Court for the District of Delaware, C.A. No. 1:22-cv-01378-MN, January 2024. [Masimo Corporation and Ceracor Laboratories]
5. Trial Testimony in *In the Matter of Certain Bio-Layer Interferometers and Components Thereof*, United States International Trade Commission, Inv. No. 337-TA-1344, November 2023. [Sartorius]
6. Deposition Testimony in *In the Matter of Certain Bio-Layer Interferometers and Components Thereof*, United States International Trade Commission, Inv. No. 337-TA-1344, May 2023.
7. Deposition Testimony in *World Champ Tech LLC v. Peloton Interactive, Inc.*, United States District Court, Northern District of California, San Francisco Division, Case No. 3:21-cv-03202-LB, April 2023. [Peloton Interactive]
8. Deposition Testimony in *In Re: Google Play Store Antitrust Litigation: Match Group, LLC, Humor Rainbow, Inc., PlentyOfFish Media ULC, and People Media, Inc. v. Google LLC, Google Ireland Limited, Google Commerce Limited, Google Asia Pacific PTE. Limited, and Google Payment Corp.* United States District Court, Northern District of California, Case Nos. 3:21-md-02981 and 3:22-cv-02746, March 2023. [Match Group plaintiffs]
9. Deposition Testimony in *Healthcare Recovery Group, LLC v. Coresource, Inc.*, In the Circuit Court of Cook County, Illinois, County Department, Law Division, Case No. 07-CH-016360, October 2022. [Healthcare Recovery Group, LLC]
10. Declaration of Steven Schwartz, Ph.D., *Barrientos et al. v. CoreCivic, Inc.*, United States District Court, Middle District of Georgia, Case No. 4:18-cv-00070, October 2022. [Barrientos et al.]
11. Deposition Testimony in *PureCircle USA Inc. and PureCircle SDN BHD v. Sweegen, Inc. and Phyto Tech Corp. d/b/a Blue California*, Case No. 8:18-cv-1679 JVS (JDE), United States District Court, Central District of California, Southern Division, January 2022. [Sweegen, Inc. and Phyto Tech Corp.]

12. Deposition Testimony in *Baxalta Incorporated and Baxalta GmbH v. Genentech Inc. and Chugai Pharmaceutical Co., Ltd.*, District of Delaware, C.A. No. 17-509-TBD, August 2021. [Genentech Inc. and Chugai Pharmaceutical Co., Ltd]

Reports

13. Expert Rebuttal Report of Steven Schwartz, Ph.D. in *Provisur Technologies, Inc. v. Weber, Inc. and Weber Food Technology GmbH*, United States District Court for the Western District of Missouri (St. Joseph Division), Case No. 5:21-cv-06113, May 2024.
14. Report of Steven Schwartz, Ph.D. in *Prevent U.S.A. Corporation v. Volkswagen, AG and Volkswagen Group of America, Inc.*, United States District Court for the Eastern District of Texas (Marshall Division), Case No. 2:22-cv-00506-JRG-RSP, May 2024.
15. Report of Steven Schwartz, Ph.D. in *Gerald Hayden v. International Business Machines Corporation, Pablo Suarez and Shankar Ramamurthy*, United States District Court for the Southern District of New York, Case No. 7:210CV-02485-VB, February 2024.
16. Class Certification Expert Report of Steven Schwartz, Ph.D. in *IN Re: Valve Antitrust Litigation*, United States District Court for the Western District of Washington at Seattle, Case No. 2:21-cv-00563-JCC, February 2024.
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Reply Attachment A-2
Reply Materials Considered

Pleadings and filings

- 2/8/2024 Motion for Class Certification and Appointment of Co-Lead Class Counsel.
- 5/17/2024 Valve Corporation’s Motion to Exclude Testimony of Steven Schwartz, Ph.D.
- 5/17/2024 Defendant Valve Corporation’s Opposition to Plaintiffs’ Motion for Class Certification.

Expert reports

- Class Certification Expert Report of Steven Schwartz, Ph.D., 2/8/2024.
- Corrected Expert Report of Professor Joost Rietveld with Errata, 3/20/2024.
- Corrected Class Certification Expert Report of Steven Schwartz, Ph.D., 3/21/2024.
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- Class Certification Expert Report of Ashley Langer, Ph.D., 5/17/2024.
- Class Certification Expert Report of Lesley Chiou, Ph.D., 5/17/2024.
- Corrected Class Certification Expert Report of Lesley Chiou, Ph.D., 6/10/2024.
- Errata to the Class Certification Expert Report of Lesley Chiou, Ph.D., 6/10/2024.

Deposition testimony

- Augusta Butlin Valve Corporation, Steam Business Team, 10/11/2023, Exhibits 59, 119–131.
- Lesley Chiou Occidental College, Professor of Economics, 6/18/2024.
- Tom Giardino Valve Corporation, Steam Business Team, 11/2/2023, Exhibits 178–199.
- Erik Johnson Valve Corporation, N/A, 9/26/2023, Exhibits 22–28.
- Alden Kroll Valve Corporation, Steam Business Team, 11/16/2023, Exhibits 242–304.

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Scott Lynch Valve Corporation, Chief Operating Officer, 10/12/2023, Exhibits 132–144.

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Bates stamped documents

AMZ00000384	VALVE_ANT_0051858
EPIC_VALVE_0000013	VALVE_ANT_0051896
EPIC_VALVE_0000058	VALVE_ANT_0051956
EPIC_VALVE_0000073	VALVE_ANT_0051958
EPIC_VALVE_0000338	VALVE_ANT_0052615
EPIC_VALVE_0000364	VALVE_ANT_0052707
EPIC_VALVE_0000712	VALVE_ANT_0052792
MSFT_VALVE_000000536	VALVE_ANT_0053081
NOA-VALVE-000252	VALVE_ANT_0053212
EPIC_VALVE_0000712	VALVE_ANT_0053488
VALVE_ANT_0009089	VALVE_ANT_0054709
VALVE_ANT_0019400	VALVE_ANT_0056622
VALVE_ANT_0046076	VALVE_ANT_0057676
VALVE_ANT_0048944	VALVE_ANT_0058980
VALVE_ANT_0051718	VALVE_ANT_0062248

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VALVE_ANT_0062254	VALVE_ANT_0294967
VALVE_ANT_0094642	VALVE_ANT_0313083
VALVE_ANT_0097350	VALVE_ANT_0333351
VALVE_ANT_0105642	VALVE_ANT_0336935
VALVE_ANT_0113615	VALVE_ANT_0338604
VALVE_ANT_0113865	VALVE_ANT_0340706
VALVE_ANT_0114228	VALVE_ANT_0360722
VALVE_ANT_0116440	VALVE_ANT_0366501
VALVE_ANT_0116537	VALVE_ANT_0372900
VALVE_ANT_0119368	VALVE_ANT_0403568
VALVE_ANT_0122456	VALVE_ANT_0415674
VALVE_ANT_0127888	VALVE_ANT_0415806
VALVE_ANT_0157071	VALVE_ANT_0453006
VALVE_ANT_0164882	VALVE_ANT_0491235
VALVE_ANT_0174341	VALVE_ANT_0493329
VALVE_ANT_0201398	VALVE_ANT_0495189
VALVE_ANT_0203447	VALVE_ANT_0498342
VALVE_ANT_0205379	VALVE_ANT_0503642
VALVE_ANT_0208510	VALVE_ANT_0503984
VALVE_ANT_0221829	VALVE_ANT_0505107
VALVE_ANT_0223399	VALVE_ANT_0516011
VALVE_ANT_0240280	VALVE_ANT_0557762
VALVE_ANT_0240323	VALVE_ANT_0558338
VALVE_ANT_0240870	VALVE_ANT_0603106
VALVE_ANT_0244799	VALVE_ANT_0605087
VALVE_ANT_0251989	VALVE_ANT_0605887
VALVE_ANT_0261956	VALVE_ANT_0606204

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VALVE_ANT_0610426	VALVE_ANT_1169932
VALVE_ANT_0611069	VALVE_ANT_1186878
VALVE_ANT_0758082	VALVE_ANT_1191414
VALVE_ANT_0760595	VALVE_ANT_1192672
VALVE_ANT_0805240	VALVE_ANT_1192756
VALVE_ANT_0809427	VALVE_ANT_1193127
VALVE_ANT_0813962	VALVE_ANT_1198639
VALVE_ANT_0814643	VALVE_ANT_1204851
VALVE_ANT_0891576	VALVE_ANT_1208824
VALVE_ANT_0897683	VALVE_ANT_1210287
VALVE_ANT_0906930	VALVE_ANT_1216044
VALVE_ANT_0918466	VALVE_ANT_1216845
VALVE_ANT_0923766	VALVE_ANT_1218785
VALVE_ANT_0931495	VALVE_ANT_1218995
VALVE_ANT_0932349	VALVE_ANT_1219134
VALVE_ANT_0936452	VALVE_ANT_1220287
VALVE_ANT_1010974	VALVE_ANT_1220449
VALVE_ANT_1018332	VALVE_ANT_1223464
VALVE_ANT_1024002	VALVE_ANT_1232536
VALVE_ANT_1049721	VALVE_ANT_1243278
VALVE_ANT_1053758	VALVE_ANT_1610648
VALVE_ANT_1060339	VALVE_ANT_1706336
VALVE_ANT_1129469	VALVE_ANT_1708862
VALVE_ANT_1163340	VALVE_ANT_1795895
VALVE_ANT_1167505	VALVE_ANT_1813218
VALVE_ANT_1168208	VALVE_ANT_1813388
VALVE_ANT_1169871	VALVE_ANT_1817158

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VALVE_ANT_1818380	VALVE_ANT_2791836
VALVE_ANT_2370744	VALVE_ANT_2798265
VALVE_ANT_2413024	VALVE_ANT_2809963
VALVE_ANT_2415319	VALVE_ANT_2819363
VALVE_ANT_2417491	VALVE_ANT_2839505
VALVE_ANT_2422876	VALVE_ANT_2899016
VALVE_ANT_2435973	VALVE_ANT_2906521
VALVE_ANT_2436420	WOLFIRE_00036603
VALVE_ANT_2526039	
VALVE_ANT_2527325	
VALVE_ANT_2527343	
VALVE_ANT_2532441	
VALVE_ANT_2532481	
VALVE_ANT_2565882	
VALVE_ANT_2572410	
VALVE_ANT_2576464	
VALVE_ANT_2619121	
VALVE_ANT_2622787	
VALVE_ANT_2625156	
VALVE_ANT_2649701	
VALVE_ANT_2710918	
VALVE_ANT_2713221	
VALVE_ANT_2715858	
VALVE_ANT_2788022	
VALVE_ANT_2788034	
VALVE_ANT_2790004	
VALVE_ANT_2790480	

Reply Attachment B-1

Produced Documents Demonstrating Valve's PMFN Enforcement (2007–2022)

Bates Number	Date	Type of Product (Content or Steam Keys)	Type of Parity (Content or Price)	PMFN Context and Quote
VALVE_ANT_2790004-09, at VALVE_ANT_2790008-09	12/12/2007–12/27/2007	Content	Price	In an email regarding game offering, Valve told ██████ that "[w]e're just trying to get [t]he matching retail offer[.]"
VALVE_ANT_2788022-24, at VALVE_ANT_2788022-23	2/6/2008–2/7/2008	Content	Price	In discussing a draft Steam Distribution Agreement, a publisher told Valve that "I just read the changes you made to the agreement and noticed you made significant changes to the pricing clause, which isn't what I expected at all when agreeing to allow Valve to do a 10% price drop at launch. . . . We will treat your company with the utmost of respect and do everything within our power to keep our pricing terms on par with that of our other partners[.]" Valve responds that they are "not asking for better wholesale pricing, we're just asking that we be able to match what the product is being offered for. We can't afford to have ██████ you, or any third party selling it for less than we do, while we expose the game to our audience. That would lead to our audience and the public thinking we are overpriced and there are better alternatives to find games. We just want basic parity. Limited time sales are understandable, but we can't be forced to have a high priced game or to eat our margin while others have a better offering. That's not really fair." The publisher asks whether they are striking the language from the draft agreement and sign the agreement with the rest of the agreed-upon changes. Valve answers that "if you don't want to split the 10% by reducing your ██████ and give us surety that we're going to have retail price parity as part of the marketing package, that's OK. However, in that case, we should just remove all of the marketing commit from our side as well."
VALVE_ANT_2791836-38, at VALVE_ANT_2791837	3/10/2008–3/18/2008	Content	Price	██████████ emailed Valve, seeking to negotiate a Steam Distribution Agreement. Valve responds: "Most importantly, we want to make sure that ██████ releases day and date with your other partners and that pricing and promotions are consistent."
VALVE_ANT_2790480-86, at VALVE_ANT_2790484	11/9/2009–11/30/2009	Content	Price	Alden Kroll, a member of the Steam Business Team, reached out to ██████ regarding the pricing of its game ██████. "We see that ██████ street price for Avatar appears to be ██████ lower than you are asking us to sell the game for. Both ██████ and ██████ are selling for ██████. Can we get closer to this price on Steam? We're happy to show ██████ as the suggested price grayed out with a price of ██████ next to it. We don't need to be the cheapest option, but we need to at least be close to what customers can get the game for everywhere else."
VALVE_ANT_1795895-99, at VALVE_ANT_1795898	6/12/2012–6/14/2012	Content	Price	Regarding Steam Summer Sale, Valve emails developers, stating "[w]e'd like to take this opportunity to ensure the base price for your games are still comparable with other retailers. If there have been any adjustments to your price that are not currently reflected on Steam, please provide us with the latest information in the template below."
VALVE_ANT_0403568-69, at VALVE_ANT_0403568	7/9/2012	Content	Price	A developer emailed Valve asking, "██████████ was not launched in ██████ due to the ██████ price. Now that it has been lowered to ██████ can you please flip the switch there so we can start taking preorders?" Valve responded that it "will make the preorder in ██████ live today. That is great news about matching the retail price."
VALVE_ANT_0372900-08, at VALVE_ANT_0372907-08	7/12/2012–7/14/2012	Content	Price	Valve reached out to ██████: "You currently have a sale on your site running at 25% ██████ and you have only authorized a 20% discount on our site. Please allow us to offer your games at 25% off so we match. If not, we should end our sale on your products so we do not upset our users." Later in the chain, Valve states, "It does not matter that you think Steam sells more, you're still creating a situation where users on your site get a better deal than users that want to purchase from Steam. You are still competition making us look bad to our users. What does it hurt to have the same discount price unless you [are] truly just thinking about how your site looks compared to Steam. Please understand that I am happy to completely remove ██████ from the sale include [sic] the daily deal for ██████ tomorrow if you feel your products do not benefit from the sales we run. There are lots of partners that would like to have that slot that work with us on a fair bases making sure we get to match their promotions instead of put us at a disadvantage. This is your decision but I am not going to have our customers treated unfairly."
VALVE_ANT_1216044-45, VALVE_ANT_1216044	6/6/2013–6/7/2013	Content	Price	Valve emails ██████ about a price discrepancy: "[T]his presents a problem for us on Steam. We want to make sure that our price on Steam is competitive with retail and other digital stores in ██████ so that we do not teach customers that Steam is always the expensive option."
VALVE_ANT_0244799-802, at VALVE_ANT_0244799-801	6/12/2013–6/14/2013	Content	Both	In a set of emails regarding potentially onboarding a publisher on Steam, Valve tells the publisher that its "rev split is 70-30. We give you full control over pricing, but if you're selling at \$20 on another retail and \$30 on Steam, we'll ask you to let us match that price. We don't request any exclusivity, but we want our Steam customers to have access to any additional content or DLC that you might release."

Bates Number	Date	Type of Product (Content or Steam Keys)	Type of Parity (Content or Price)	PMFN Context and Quote
VALVE_ANT_0048944-49, at VALVE_ANT_0048944-46	6/28/2013-7/12/2013	Content	Price	Valve writes to █████ regarding the release of its █████ game in █████. "The pricing in █████ looks to be offered at █████ & █████. To be in parity with █████, we'd like to offer the pre-purchase at █████." Valve later states, "If we can't be in parity in █████ then we can just not sell there, but that does leave a lot of money on the table." █████ lowers the price in █████.
VALVE_ANT_0116537-38, at VALVE_ANT_0116537	8/20/2013	Steam Keys	Price	In an email regarding Steam Keys, Valve told a publisher that "[y]ou can still sell elsewhere, but we ask for general pricing parity and don't allow F2P games to link to non-steam stores from Steam."
VALVE_ANT_0360722-23, at VALVE_ANT_0360722-23	10/24/2013	Content	Price	Valve contacts a developer noting that game █████ is priced higher on Steam than on █████ and █████ website: "[Y]ou're currently selling it on your own site & █████ for \$4.99. Are you planning on raising the price on both your site & █████ at the same time the game is released on Steam?" The developer states that it is planning to raise the price to \$7.99 on all platforms. Valve agrees with this approach: "It would be best to have the same base price on all platforms, so \$7.99 across the board."
VALVE_ANT_0336935-37, at VALVE_ANT_0336936-37	12/17/2013-12/27/2013	Content	Price	A developer tells Valve that it is "hoping to get some direction about pricing if possible too. . . . Someone told me once that you guys know your stuff as far as pricing things is concerned." Valve responds, "We do have some general thoughts on pricing, such as if you're going to sell your game in more than one channel, then you should keep your pricing in parity across those channels, this way users aren't confused about prices difference meaning content differences or feel burned for buying from one channel over another."
VALVE_ANT_0240870-75, at VALVE_ANT_0240870-71	1/1/2014-1/8/2014	Content	Price	In response to a developer asking about Steam's pricing policies, Valve states, "Our big aim on pricing is to offer customers the best deal. We're not very aggressive or draconian about it, but if we see that █████ is on sale for 6.99 on █████ and █████, we're going to drop you a line to make sure we update Steam pricing accordingly." The developer responds: "Yep, that all makes a ton of sense. I don't have any plans to pit the two stores against each other or mess with pricing too much."
VALVE_ANT_2809963-64, at VALVE_ANT_2809963	1/9/2014-1/12/2014	Content	Both	In an email regarding Steam Distribution Agreement negotiation, █████ tells Valve, "We had a very productive meeting this week on the latest draft of the contract you circulated and I would really like to advance this with you. The big sticking point for me is still the requirement for parity on pricing and selection of DLC that you introduced on 16 December. I have taken advice from EU and US antitrust experts and their advice is the same - the current (previous version without this new language) MFN clause is just about acceptable. The addition you are seeking is not and is to be avoided at all costs for Steam and █████ benefit. Can we please revert to the previous language?" Valve then forwards the email internally and discusses. The contents of the discussion are unknown because those portions of the documents are labeled as "Privileged Material Redacted".
VALVE_ANT_0240323-25, at VALVE_ANT_0240323-24	2/23/2014-3/3/2014	Both	Price	A developer asks Valve, "We're also going to do a release with █████ on the same day. Is there's [sic] anything you should know about us doing █████ Anything we should know?" Valve responds: "Nothing major! The big things to remember are that you should have price/discount parity, especially at launch (3 months from now, it's no big deal if you're on sale there but not on Steam, and vice versa. But at release, you're going to have tons of very sad customers if the game is 20% off on one store and 25% off on another). You'll need to keep parity on discounts as well - if you're 50% off on Steam at Christmas, you should also be 50% off █████"
VALVE_ANT_0240280-82, at VALVE_ANT_0240280-82	3/3/2014-3/5/2014	Both	Both	A developer emails Valve, asking to offer a tiered pre-order incentive for their games as they launch a new partnership with another platform. Valve responds, asking whether they can "offer Steam the same maximum bundle offer on Steam closer to launch?" The developer responds, confirming "the idea is to have parity."
VALVE_ANT_0221829-831, at VALVE_ANT_0221829	4/16/2014-5/12/2015	Steam Keys	Price	Valve told a developer that "Steam keys are free, but it's not OK to sell them unless there's an equivalent offer available on Steam."
VALVE_ANT_2532481-83, at VALVE_ANT_2532482	5/9/2014-5/10/2014	Content	Price	Valve reaches out to a developer: "[I]t looks like the game sells online for about 7 bucks already, but the price you requested on Steam is \$14. We try to offer our customers the best possible prices, so we avoid selling at a disadvantage like that. Once the price on Steam matches the price elsewhere, we'll be ready to release the game!" The developer responds, informing Valve that the game's "price on other digital retailers has now been updated accordingly[.]"
VALVE_ANT_0333351-59, at VALVE_ANT_0333351, VALVE_ANT_0333353	6/6/2014-7/9/2014	Content	Both	Regarding a developer's game, Valve tells the developer that "the Steam version needs to be in content & pricing parity so that Steam users aren't presented with a lesser offer." The developer responds that it is "clear on [this] point," and there is no further discussion of parity.

Bates Number	Date	Type of Product (Content or Steam Keys)	Type of Parity (Content or Price)	PMFN Context and Quote
VALVE_ANT_2532441	6/13/2014	Content	Price	Valve tells a developer that "[i]t's OK for the game to be on sale on one store and not on sale on Steam at the same time, we just look for parity in the event of simultaneous sales (eg Christmastime), and relative fairness (if you're always approving 75% off on the [REDACTED] and 50% off on ours, we'd want to have a chance to match that offer or we'd probably not promote the game, just because our customers are super sensitive to that."
VALVE_ANT_1610648	7/1/2014-7/2/2014	Content	Price	In an email regarding [REDACTED] participation in a [REDACTED] Valve states, "If that promotion happens right in front of your publisher sale, our forums are going to go crazy calling customers stupid for buying those games on Steam. And we're just going to look like the expensive place to buy your games. . . . When we've run into this in the past we've looked at two solutions. One is to make sure the [REDACTED] and Steam promotion are separated by at least a month, just so it doesn't look like Steam prices are terrible."
VALVE_ANT_2819363-68, at VALVE_ANT_2819364-65.	7/29/2014-1/23/2015	Content	Content	In an email regarding [REDACTED] request to modify the Steam Distribution Agreement's parity requirement, Valve told the developer that "I spoke with our legal guys last week and we went over the agreement together. . . . We will send along soon with reasoning but it is important agreements are consistent across partners and we don't break some of the material pieces in the agreement around parity and updating the application especially."
VALVE_ANT_2576464	8/15/2014	Content	Price	In an email regarding [REDACTED] game's discount, Valve tells [REDACTED] that it "[j]ust saw today that the pricing for [REDACTED] on Steam is uncompetitive with other retailers, similar to the issue we're having with [REDACTED] and [REDACTED] . . . We've made the choice to take the game down until we can reach price parity."
VALVE_ANT_0338604-611, at VALVE_ANT_0338608-09	9/24/2014-9/30/2014	Content	Price	When a developer requests a price change, a Valve employee states, "I reviewed you[r] price changes and found that they are all significant increases over what you had approved. The new pricing is also significantly higher than would the market economic would say they should be. For this reason I do not recommend making these changes and would like to understand your reasoning for the increase." After the developer responds noting that they have "commitments to [its] retail partner[.]" Valve responds that it is "going to remove the game from sale in those [REDACTED] regions. The increase in price is significant even that the users going forward will notice and the media will pick up on it. Valve does not want that so we will let your retailer be your channel in the region."
VALVE_ANT_2436420-22, at VALVE_ANT_2436420-22	10/3/2014-10/15/2014	Both	Price	A developer emailed Valve that their game "was greenlit a while ago, but we have not put the game on steam yet. Yesterday we found out that [the game] is going to be included in an upcoming [REDACTED], and the [REDACTED] goes live on october 25th." Valve responds to the developer: "[W]e'd be unwilling to launch your game on Steam if it was available at a way better price somewhere else. . . . So launching on Steam alongside a [REDACTED] is a no-go . . ."
VALVE_ANT_0116440-41, at VALVE_ANT_0116440	1/4/2015-1/5/2015	Both	Price	Valve tells a developer that "[i]t do[es] not take any revenue share from non-Steam sales, whether [a developer is] selling a Steam key or not. [Valve] do[es] ask that the pricing is fair - in other words, [a developer] shouldn't sell [its] product on Steam for \$10 and then sell it on another storefront for \$5."
VALVE_ANT_1060339-345, at VALVE_ANT_1060339	1/21/2015-2/5/2015	Content	Price	In an email to [REDACTED], Valve states, "We're working really hard to expand into [REDACTED] and teach [REDACTED] users that Steam is a great place to buy games. Price gouging them with no justification just shows them that [REDACTED] doesn't care about them, and trains them to buy games from other publishers instead of [REDACTED]. We think you'll do a lot of damage to your relationship with customers, and we don't want to be known as the store where [REDACTED] prices are unfair. We've pursued this same policy with other partners and in other regions, to make sure Steam customers aren't put at an unfair disadvantage to customers shopping at retail or online at other stores."
VALVE_ANT_0906930-31, at VALVE_ANT_0906930	1/22/2015	Content	Price	In an email to [REDACTED] Valve brought up concerns regarding a game's price compared to other retailers: "My concern with 2499 is that it is an unprecedented price in the market for PC titles, and regardless of SRP, retailers may choose to mark the title down to a price more appealing to consumers. That would leave Steam looking like the high priced option."
VALVE_ANT_0174341-46, at VALVE_ANT_0174345-46	1/22/2015-1/26/2015	Content	Price	In an email, [REDACTED] told Valve that "the [REDACTED] price is confirmed to match our expected retail price. We will continue to monitor the ruble. If we make any changes, we will align Steam to match." Valve replied that its "concern with 2499 is that it is an unprecedented price in the market for PC titles, and regardless of SRP, retailers may choose to mark the title down to a price more appealing to consumers. That would leave Steam looking like the high priced option. If you're going at 2499, it might make more sense for us to wait a couple of days and see how the pricing settles at retail."
VALVE_ANT_2619121-23, at VALVE_ANT_2619124	1/29/2015-2/2/2015	Content	Price	Developer [REDACTED] demonstrates that they are aware of price parity requirements: "We're in the finish line here with [REDACTED] and we are working on our storefront in-app and our #1 goal is to make sure that we have full parity within pricing in steam. A few things (Bundles) will be on Steams storefront, but we just have a few more questions about certain pricing/country codes."

Bates Number	Date	Type of Product (Content or Steam Keys)	Type of Parity (Content or Price)	PMFN Context and Quote
VALVE_ANT_0223399-3401, at VALVE_ANT_0223399	2/2/2015-3/23/2015	Steam Keys	Price	In an email chain, a Valve employee states, "There's no 'gotcha' or punishment if you sell Steam keys on other store, even right at launch. The only time we have a problem is pricing disparity-for example, if the game is \$9.99 on Steam but \$8.99 on some other store."
VALVE_ANT_2435973-77, at VALVE_ANT_2435975	5/8/2015-5/9/2015	Content	Price	A developer informs Valve that it is being asked by [REDACTED] and [REDACTED] if it wants to put its game in their summer sale. The developer says it does not want to conflict with the Steam Summer sale. Valve responds to the developer: "You're welcome to participate in both sales, we'd just ask that you approve the same discounts. We'd love to feature [REDACTED], but we'd have a problem if it was 50% on Steam, and then 66% on [REDACTED] a day or week later."
VALVE_ANT_0340706-713, at VALVE_ANT_0340711-712	7/17/2015-7/24/2015	Content	Price	In an email to [REDACTED], Valve stated that "[w]e really enjoyed our conversations and look forward to a successful [REDACTED] launch! I will send over the materials we presented soon. One concern that came up afterward is the planned wallet card promotion we have at retail. It seems that the price we were given for [REDACTED] which would be printed on all the [REDACTED] cards. However, we noticed that it is selling online on both [REDACTED] and [REDACTED] for only [REDACTED] [...] Can you please confirm that the price for [REDACTED] on Steam in [REDACTED] will be competitive?"
VALVE_ANT_0313083-84, at VALVE_ANT_0313083	9/3/2015	Content	Price	Valve emailed [REDACTED] about local currencies and payment methods: "You can change any price in any currency as needed. Just make sure that you're not disadvantaging Steam customers."
VALVE_ANT_0051718-19, at VALVE_ANT_0051718	9/22/2015-10/1/2015	Content	Price	In internal emails, Valve states, "We're going to remove the purchase offer for [REDACTED] in [REDACTED] today. We've asked [REDACTED] to list a competitive price to what we're seeing at other retail outlets, and they've said they are unable to do so. The new [REDACTED] is in a similar position, and Ricky is talking through solutions with [REDACTED]."
VALVE_ANT_0760595-0601, at VALVE_ANT_0760597	12/30/2015-12/31/2015	Steam Keys	Price	In an email regarding massive Steam Keys request, Valve told a publishers that "[o]ur one core request is 'please do not disadvantage customers on Steam.' . . . In addition, our basic stance on humble bundle is if you don't want to put the games up for sale at 98% off on Steam, you really shouldn't put them in a [REDACTED]."
VALVE_ANT_2417491-92, at VALVE_ANT_2417491-92	1/4/2016	Steam Keys	Price	In an internal discussion, Valve describes that it will not run a promotion request from a developer because of pricing discrepancies in sales on other stores: "These guys had a free weekend planned back in Feb 2015. Chris rightfully killed that promotion, because they were running a [REDACTED] at the same time and you could get it for less than what the sale price would have been on Steam (email attached). They would like to revisit the idea of running a Free Weekend, but their situation is even worse than it was before. They ran their 4 pack as part of [REDACTED] back in October 2015. Now the game costs \$1.18 on [REDACTED]. Whoops. I'm going to let them know we aren't able to promote them at this time."
VALVE_ANT_1216845-850, at VALVE_ANT_1216845, VALVE_ANT_1216847-848	3/23/2016-10/3/2017	Steam Keys	Price	A developer contacts Valve regarding Steam-Key request rejections. A Valve employee responds to the developer: "I dug into this a little bit today to try to understand why our system is rejecting your key request. I think the main issue here is that [REDACTED] is willing to do many special offers on your game with Steam keys off Steam, but have only run one discount to date on Steam. This puts Steam customers at a disadvantage. We are OK supporting special offers with Steam keys for partners if they treat Steam customers on Steam fairly." Ultimately Valve states, "We have decided to no longer support [REDACTED] with additional Steam keys for [REDACTED]."
VALVE_ANT_1010974-990, at VALVE_ANT_1010980-981, VALVE_ANT_1010988-990	7/1/2016-7/27/2016	Steam Keys	Price	A developer emailed Valve regarding key giveaways. Valve responds to the developer: "[W]e let partners use Steam keys for free, and we ask in return that Steam customers get a fair deal. A system where you get the game free from some other store, but you have to pay for it on Steam, isn't OK with us." The developer canceled the giveaways it had scheduled with other partners and proposed running a giveaway through Steam.
VALVE_ANT_1053758-761, at VALVE_ANT_1053760-61	8/30/2016-9/2/2016	Steam Keys	Price	Valve writes to developer [REDACTED] expressing disappointment that its games were launched at full price on Steam while being discounted on [REDACTED]. Valve states, "Using Steam keys and participating in bundles is fine, but part of the promise we're making to customers is that Steam is a good place to buy games, especially on launch day. We did a lot of short-notice work to get these games released on Steam quickly. Running a [REDACTED] the next day is a pretty bad message-- both for Valve directly, and for all the people who bought these games at full price on our store when they could have gotten a better deal somewhere else. . . . [!]'s not OK to use Steam keys to put Valve at disadvantage in the marketplace. We'd really like to get a similar \$15 bundle offer up on Steam ASAP so that customers get equitable treatment and can get an equivalent offer on our store[.]"

Bates Number	Date	Type of Product (Content or Steam Keys)	Type of Parity (Content or Price)	PMFN Context and Quote
VALVE_ANT_0758082-090, at VALVE_ANT_0758082-84	8/24/2016-9/10/2016	Content	Price	██████ developer ██████ reaches out to Valve about a DLC offering that is sold on ██████ as well. Valve responds to the developer: "██████ is selling [the game] well not because users necessarily want to buy the game there, but because of the pricing issue I mentioned to you before. . . . The proposal you've made makes Steam the worst place to purchase Steam games. It doesn't make sense for us or customers, and we can't be successful together as partners with this kind of model." The developer writes back: "The issue ██████ is selling at lower price, we cannot make ██████ keep the full price because retailers can set the price as they want according to ██████ law. Therefore, what we are thinking is if ██████ would reduce the price we would have to lower the price on Steam store as well."
VALVE_ANT_0251989-991, at VALVE_ANT_0251989-990	9/15/2016-9/16/2016	Content	Price	A developer emails Valve, asking if they "are allowed to create packages on other stores in a slightly different manner, according to their certain pricing structure[.]" Valve responds, telling the developer "[t]he big requirement for us is, treat steam customers fairly. You have complete control over your pricing on Steam, but we are not interested in selling a game if it is a rip off for the people buying on Steam. Just do the math. . . . Make sure the cost for the total game experience is fair. If users can buy all four episodes for \$20 on some other store, don't charge 25 for it on Steam." The developer responds, telling Valve they "see [their] point. Valve does not tolerate considerable discrepancy in prices of the same product outside the Steam store."
VALVE_ANT_0113865-68, at VALVE_ANT_0113865-66	12/21/2016-12/29/2016	Content	Both	In response to a developer not offering the same in-game purchase options on Steam as on other platforms, Valve drafts the following to be sent to publisher: "Part of running our store is making sure that Steam customers are treated well and have access to the same content and features that are available on other platforms. We're not really interested in running a store where customers are limited in what they can do with the Steam version and regret their purchases or wish they bought somewhere else. Our general attitude historically has been that if Steam customers don't get a fair shake from a publisher or developer, we just opt not to sell the game in question, rather than make a bad offer that erodes user trust in the store."
VALVE_ANT_0203447-49, at VALVE_ANT_0203448	2/7/2017-6/2/2017	Content	Price	Valve tells a publisher that "[o]ur recommended pricing is how Valve sells our own games, and how most of our partners sell theirs, but price is up to publishers. If you'd like to use our suggestions, that's fine! [!]If you have other data or reasons for using different prices, that's fine too! Our only ask is that you treat Steam customers fairly--if you're charging 10euro on other stores or at retail, be fair to Steam users and give them the same price."
VALVE_ANT_0493329-332, at VALVE_ANT_0493329-330	2/8/2017-2/9/2017	Steam Keys	Both	In an email to a developer, Valve states, "Happy Valve: Helping devs reach more customers in more places by providing free Steam keys, so that the purchase options available on Steam are also available on other stores and platforms. No fees or royalties associated with Steam key generation or redemption, just a free bonus of being a Steam partner! Sad Valve: Selling the same content at a better price via Steam key, or selling better/different content that Steam customers aren't able to buy from the Steam store directly." The developer responds, saying they "want to stay on the Happy Valve side for sure[.]"
VALVE_ANT_0201398-1410, at VALVE_ANT_0201398	3/17/2017-3/27/2017	Steam Keys	Price	In an email regarding Steam Keys, Valve tells a developer that "we don't support a model where you're using our free Steam keys to serve customers on some other stores but not making an equivalent offer on Steam. For instance, it wouldn't be OK to make a bundle offer available in ██████ s [sic] exclusively through your other stores; that makes no business sense for us, since you're just selling free units of our inventory. If you want to offer a bundle to ██████ customers on ██████ or other stores, that's awesome, but we need to have that offer on our store, too."
VALVE_ANT_0366501-02, at VALVE_ANT_0366501	5/9/2017-5/17/2017	Content	Price	In an email, Valve flags to a developer that the Steam price is higher than the converted regional price offered on the developer's own platform: "It looks like the ██████ is sold on your site for \$5.49AUD. This should convert to ~\$4.00USD but the Steam Store is priced at \$4.99. I have a user that isn't happy with the inflation so I want to confirm that \$4.99USD is the intended price on Steam for this content."
VALVE_ANT_0923766-774, at VALVE_ANT_0923771-773	7/3/2017-7/11/2017	Steam Keys	Price	In an email regarding Steam Keys, Valve states, "If your business model relies on giving away hundreds of thousands of copies of your game or DLC, that's fine by us but you'd want to be giving that content away for Free on Steam, too. If you're not willing to make it free on Steam but users can reliably expect to get it for free through other channels, we'd just want to stop doing business together, because it doesn't make sense for us to sell things on our store that give our customers an unfair deal." The developer responds, saying they "see it from [Valve's] side" and agreeing to "cease the giveaways[.]" Valve also tells the developer that "[o]ur concern is making sure our Store makes a great offer to our customers. So, if the game is more expensive on our store than other stores, we'd want to either offer the game at that better, lower price, or stop doing business together."
VALVE_ANT_0495189-95, at VALVE_ANT_0495193	7/5/2017-8/16/2017	Steam Keys	Price	In an email exchange between Valve and a publisher, Valve communicates to the publisher that "we're just not willing to perpetually undercut our own store and hurt our own customers with these key giveaways [(i.e., discounting games)] elsewhere," so "if you want to do a big giveaway of Steam keys [on other stores], that's generally going to be fine, but we'll want to match the offer at the same time on Steam."

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VALVE_ANT_0603106-109, at VALVE_ANT_0603107-108	9/7/2017-10/4/2017	Steam Keys	Price	A developer reaches out to Valve to resolve a seeming discrepancy in the denial of Steam key requests for their game: "Please see below from someone whose business I turned down at your request." Valve explains the basis of its policy for granting or denying Steam keys: "Another thing that we look at is whether or not Steam users are given the same deal on a game, or if a partner is actively encouraging our customers to look elsewhere for your content as they're never going to find the best deal on the Steam Store."
VALVE_ANT_1168208-212, at VALVE_ANT_1168208, VALVE_ANT_1168210	9/12/2017-9/19/2017	Steam Keys	Price	In an email regarding Steam Keys, Valve tells a developer, "No strong stance on which part of the catalog [sic] you focus on from us, and taking advantage of the long-tail PC revenue is a great strategy. But if the way you do that disadvantages Steam's store and customers, we're not interested in supporting that, especially when it's all cost to us. If the gameplan is to sell games at low prices in [redacted], that's totally up to you guys, we just want those lower prices on our store, too (as opposed to flushing keys into the market at a disadvantage to our store)." The developer responds, saying they are "happy to abide by [Valve's] stance."
VALVE_ANT_2565882-84, at VALVE_ANT_2565883-84	10/9/2017	Content	Price	A Valve employee informs [redacted] in an email that Valve will be delisting one of its games due to price discrepancies between Steam and other platforms. When describing Valve's decision, Valve states, "Ultimately [redacted] retail strategy is yours to control in whatever way you see fit. However, it is our job as stewards of the platform is [sic] to protect Steam customers and to ensure that they are being treated fairly. We will not knowingly invite customer regret by offering your game at a premium to other retailers."
VALVE_ANT_1218995-97, at VALVE_ANT_1218995-96	10/12/2017-10/18/2017	Content	Price	Valve emails [redacted] expressing concern that "the prices you set for Steam pre-orders for [redacted] but [redacted] & [redacted] are significantly above the market price for the identical versions of the game available elsewhere. You know that it's important to us that Steam customers are treated fairly." Valve also tells [redacted] that "[u]ntil the Steam price is comparable to the market price we will not be promoting these games."
VALVE_ANT_0062248-250	11/7/2017-11/8/2017	Content	Price	Valve reaches out to developer [redacted] about discounts for its game [redacted]: "We've come across a number of sites selling the game for significantly lower than the Steam price and we're concerned about promoting a launch while the game is easily available at better prices elsewhere. Our concern is about offering our customers a competitive market price, and unfortunately it looks like the price on Steam is out of line with the rest of the market. We will be unable to run a takeover for the game on launch given these circumstances." Later in the email chain, a Valve employee states: "Generally we've been asking partners if we could offer the same deal on Steam that these other stores were offering."
VALVE_ANT_0891576-77	12/10/2017-12/12/2017	Steam Keys	Price	In an email to a developer regarding Steam-Key requests for a bundle, Valve told the developer that "[i]t's a pretty bad look for Steam customers if the games are only 20-30% off on our store at the same time that they're available at a much better price elsewhere. . . . Our expectation is that Steam customers would also get the same aggressive lower prices. Part of the reason we offer Steam keys for free is because we expect however those keys are sold, Steam customers will still get treated fairly."
VALVE_ANT_0498342-44, at VALVE_ANT_0498342-43	1/5/2018-1/8/2018	Steam Keys	Price	Valve emails a developer about the upcoming game [redacted]: "We noticed that on your own website you are selling the game cheaper than [sic] what you currently have set the price on Steam. Are you planning on changing that price to offer a similar deal on Steam?" [redacted] responds, clarifying that the developer has been using the [redacted] and that his plans were to increase the price to \$20 to match the Steam price for the launch of his newest build later this month. A Valve employee responds, stating, "[T]he rule for Steam keys is basically: if you want to use Steam keys as an incentive or marketing tool, make sure an equivalent offer is up on Steam. If you're not yet ready/willing to sell on Steam, no worries! But at that point please refrain from using Steam keys as a delivery method or incentive for purchasing." Following this email, the developer removed the Steam Key option from their website.
VALVE_ANT_0261956-59, at VALVE_ANT_0261956-59	2/8/2018-2/13/2018	Steam Keys	Price	In response to a publisher's request for a large number of Steam Keys, Valve stated that "it's fine to use [Steam] keys to run sales elsewhere [(other stores)], but it's not OK to disadvantage Steam customers." Valve noted that providing publishers free Steam Keys is one of the ways it offers value, but "we can't afford to offer you free [Steam] keys if we get massively undercut on price[.]" because "if you're always approving massive rock-bottom discounts on other stores, and not approving those discounts on our store, that's a terrible experience for somebody shopping on our store—especially since they can the exact same experience via Steam key" on another store." Valve noted that it is "unsustainable if one store gets to sell your game for \$0.25 a pop [as part of a bundle] and [Valve is] over here selling it for \$5."

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VALVE_ANT_1186878-79	2/8/2018-2/15/2018	Steam Keys	Price	Developer [REDACTED] reaches out to Valve to ask if it is "ok with valve policy" to launch their new game [REDACTED] in a bundle discount on [REDACTED] simultaneously with a launch on Steam. In an internal Valve discussion, one Valve employee states, "One of the things we value highly as a platform is being able to offer pricing and deals to Steam customers that are competitive with other platforms. . . . If you're not able to allow the same offer on Steam, then we would choose to not carry the game at launch so that customer[s] don't run into the issues reference[d] below." Another Valve employee proposes a more "simple and straightforward" response: "Our goal is to make sure Steam customers get treated fairly, so if you couldn't make an equivalent offer to customers on Steam, we'd choose not to sell the game. Selling the game in a pay-what-you-want bundle is something that might make sense later in the game's lifecycle, but it'd be unfair to Steam customers to launch at a way lower price somewhere else."
VALVE_ANT_0505107-112, at VALVE_ANT_0505109-111	2/20/2018-3/14/2018	Steam Keys	Price	A developer requested [REDACTED] Steam Keys to run a free game giveaway on [REDACTED] in exchange for a lump sum payment and other benefits. Valve told the publisher that "if you'd like to use Steam keys to run this giveaway, we can provide those keys but we'd ask that you treat Steam customers equally and also run the giveaway on Steam[.]" but Valve "wouldn't pay for this giveaway."
VALVE_ANT_0611069-082, at VALVE_ANT_0611074-77	2/25/2018-10/17/2018	Content	Price	[REDACTED] reaches out to Valve, notifying Valve that they are releasing [REDACTED] and asking for any additional promotions Valve can provide on the Steam. As part of negotiating the release on Steam and the discount amount for that release, Valve asks the developer to permit prepurchase on Steam because the developer is offering prepurchase elsewhere. The developer responds, telling Valve that "right now our pre-order discount is just 10%, so it matches the Steam launch discount in order to not put Steam customers at a disadvantage. Our pre-orders have decreased anyway the past years since we have matched the discount, as more and more customers have migrated to Steam." A Valve employee responds to the developer: "[W]e'd be happy to adjust a launch discount or loyalty plans to make sure things are fair. . . . We just really try to avoid a situation where a customer looking for a game we support can't actually buy it from us but can buy it somewhere else." The developer agrees to do a preorder on Steam.
VALVE_ANT_0205379-382, at VALVE_ANT_0205381	3/26/2018-4/24/2018	Steam Keys	Price	Valve emails a developer regarding the [REDACTED] offer happening on [REDACTED] "[Y]ou can imagine our frustration to see a competitor selling Steam keys for the content at a way better price than we've been able to offer our own customers. Can you guys help talk us through why Steam customers are being disadvantaged compared to other stores, and what we need to change to make sure Steam customers get treated fairly in the future?" The developer responds, telling Valve "it just didn't seem that steam had the appetite to do a promotion for us."
VALVE_ANT_0157071	4/20/2018	Steam Keys	Price	A publisher emailed Valve regarding Steam keys approval, and Valve told the publisher that "one thing we noticed is that the game has never gone deeper than 65% off on Steam, so it's likely that a cheap or pay what you want bundle would be offering a way better deal than we've been allowed to offer on our own store. One of the important things about Steam keys is that it's not OK to use them to disadvantage Steam customers-if you want to offer a super low price on another store, you should make an equivalent offer on Steam as well!"
VALVE_ANT_2413024-25	4/26/2018-5/18/2018	Steam Keys	Price	A developer writes to Valve, telling them they would like to run a sale on [REDACTED] and asking why Steam had denied their request for Steam Keys. Valve responds to the developer: "Looks like this is a question of making sure Steam customers are treated fairly-can you help us understand why Steam users are only getting a 50% off discount if you plan to sell the game just a couple weeks later in a pay what you want bundle?" The developer responds, saying they do not know how to make a similar offer on Steam. In response, Valve states, "Since the real purchase price of the bundle is \$1, please make sure you're providing a similarly aggressive offer to Steam customers on your game the next time you submit a discount. A good way of thinking about it would be- what's the actual price being offered, and what's the value to customers? We don't mind providing free Steam keys, but we do mind if Steam customers are getting treated unfairly compared to other stores."
VALVE_ANT_1018332	5/11/2018	Steam Keys	Price	A Valve employee writes to [REDACTED] stating that "a recent Steam Key request got flagged and brought to [his] attention re: [REDACTED]. It looks like Steam customers are getting severely [sic] disadvantaged compared to how you're selling Steam keys for the game elsewhere. . . .The value of the [REDACTED] game in that bundle would come out to pennies. Why is it being pitched to us at 14.99 or 7.99? If you're comfortable selling the game super cheap, that's just fine. But it's not OK to use Steam keys to offer a way better price somewhere else. Our expectation is that you'd be selling the game on our store for \$0.49 or whatever the market value is on other stores, not \$14.99."

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VALVE_ANT_1129469-475, at VALVE_ANT_1129471	5/21/2018-5/22/2018	Steam Keys	Price	In response to a developer's inquiry about a Steam Key request, a Valve employee states, "We are asking that you treat Steam customers the same one [sic] other sites for large key requests these days. We call it out in our steam key request wizard and you agree to it when you go to request keys. In this case, the request was denied as [redacted] has not been a free offer on Steam and this is a free offer on [redacted] with Steam keys. Do you want to run the same free offer on Steam over the weekend? We could support that with keys. Otherwise it looks like Steam is \$14.99 while [redacted] is \$0 and that looks bad to Steam customers." The developer agrees to run a free offer on Steam at the same time.
VALVE_ANT_0503984-990, at VALVE_ANT_0503984-86	7/17/2018-8/2/2018	Steam Keys	Price	In an email to Valve that copies [redacted], developer [redacted] fast asks Valve whether it would be possible to do a daily deal for its game during a limited time frame in which the downloadable content is offered for free on Steam. Valve initially agrees to the request, before backtracking, stating, "I was putting this on the schedule but a colleague asked me to take it back off the calendar because of a discount conflict- they pointed out that it's already being advertised at a way better price on the [redacted] store. Basically, [redacted] at 45% off will be \$16.49, but it's selling for \$12 right now alongside a bunch of other games in the [redacted] . . . at that point the math just doesn't work for us. . . . [W]e'd want to do the same promotional pricing on our store if we're going to merchandise [sic] the game. Are you guys comfortable with 85%-90% off on [the game] so that we're actually in the right ballpark of what the game is being promoted for elsewhere?" [redacted] responds to Valve, removing the developer from the email chain and asking Valve to reconsider.
VALVE_ANT_0503642-43, at VALVE_ANT_0503642	7/19/2018-8/24/2018	Both	Both	Ahead of the release of the game [redacted], a developer asks Valve if there are any rules regarding interactions with other digital distributors. Valve responds to the developer: "We have some simple rules and policies in the documentation but the short version is, whether you're selling with Steam Keys or not, treat customers fairly. Don't run a 25 percent off discount on Steam and then a 50 percent off discount somewhere else a week later. Don't offer our customers worse content or fewer features."
VALVE_ANT_0605887-89, at VALVE_ANT_0605889.	7/23/2018-7/25/2018	Steam Keys	Price	Valve responded to [redacted] inquiry regarding a Steam Key request, stating that "typically [Valve] ask[s] publishers to run a similar level of promotion for Steam Customers[.]"
VALVE_ANT_0814643-44, at VALVE_ANT_0814643	8/7/2018	Steam Keys	Price	In an internal Valve discussion regarding policies when issuing Steam Keys for use in a [redacted] sale, a Valve employee writes, "Lately, a bunch of us have had discussions with partners before they get their [redacted] keys and asked them to match the same offer for Steam customers (or have a negotiation around what a fair deal looks like). This seems like a fair way to handle future requests for participation in these kinds of subscriptions."
VALVE_ANT_1191414-19, at VALVE_ANT_1191414, VALVE_ANT_1191416	9/20/2018-9/21/2018	Steam Keys	Price	Valve responds to developer [redacted] request for Steam Keys for a [redacted] sale: "[T]o give Steam customers a fair deal, the price would need to be significantly lower than \$5.99. . . The total number of games does matter, so it's probably good to take a look at that, but before we provided keys for a bundle or subscription like this, we'd want to make sure Steam customers were getting a similar deal." Later in the chain, there is internal Valve discussion regarding price discrepancy on [redacted] game: "I'm on your team. I think I would politely follow up with a reminder that we're not really as worried about the time/regularity of the discount, we're worried about the offer itself- three 50% off discounts don't equal one 90% off discount. And express that we wouldn't be able to advertise the game or feature it in a sale on Steam if that Steam price is at a way worse rate than is advertised somewhere else."
VALVE_ANT_2715858-869, at VALVE_ANT_2715862-67	9/28/2018-10/19/2018	Content	Price	Valve writes to developer [redacted] asking what its launch plans are for [redacted] on [redacted] citing an article suggesting the game will be featured as a timed exclusive on [redacted]. After Valve further notes that the game will be free on [redacted] while still being a paid product on Steam, [redacted] contends that the Steam version has bonus content that [redacted] does not have. Valve responds, "You did reassure me earlier that you were intending to treat Steam customers equally to [redacted] customers, but we currently have a much worse offer than [redacted] for your game. . . . This puts us in a really uncomfortable position. For customers looking to play [redacted] we clearly have a worse offer, with the game costing money on Steam and not on other platforms. This is a thing that we push back on all partners about—it is important to us that players on Steam are treated fairly. If you can't offer Steam customers the same deal as customers on other platforms, then we're not going to be able to continue selling and promoting the game." The developer responds by apologizing and asking to remain on Steam.

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VALVE_ANT_0208510-12, at VALVE_ANT_0208512	10/16/2018-10/30/2018	Steam Keys	Price	Developer [REDACTED] emails Valve expressing concern that it requested keys for a [REDACTED] game had not yet been approved. Valve responds by noting, "the last discount on Steam was only 60% off (so about \$4 for the game). But given the structure of ultra-cheap bundling, the price for the game in a bundle will probably be something more like \$0.25 or \$1 or whatever. . . the expectation on our side is, you'd only be running a bundle if you were also offering fair/equivalent pricing in promotions on Steam. We can't provide keys to partners if all they're used for is disadvantaging our own customers."
VALVE_ANT_1218785-86, at VALVE_ANT_1218785	11/8/2018-11/13/2018	Steam Keys	Price	When denying [REDACTED] request for a Steam takeover, a Valve employee says that in terms of the developer not making the takeover, "the high proportion of key redemptions, of which most were sold at prices under what we were offering on Steam ended up being the biggest factor."
VALVE_ANT_0931495-1511, at VALVE_ANT_0931496, VALVE_ANT_0931499, VALVE_ANT_0931504	11/8/2018-11/26/2018	Both	Price	[REDACTED] emails Valve to request Steam Keys for their game, [REDACTED], for use in a [REDACTED] sale. Valve responds to the developer: "Our expectation is that Steam customers would always be treated fairly. But a 40% discount on Steam doesn't stack up fairly at all to a pay what you want bundle, where customers would pay less money and get more stuff. So we'd need to get a much better discount on Steam if you're selling the game at a better price elsewhere, regardless of Steam key usage." Later in the email chain, a Valve employee tells the developer, "[T]he goal for us is to avoid a situation where the game is being advertised on our store at one price, at the same time it's available on another store at a better price." A Valve employee reiterates this point again in the email stating, "Our general expectation is, you'd treat Steam customers the same as customers on other stores when you discount/promote the game. If you feel like a 90% sale is bad for the game, that's totally fair! But our advice in that case would be, don't offer a discount that aggressive on other stores unless it's a discount you're OK offering on ours." In the end, the developer agrees to run a steep discount on the game on Steam.
VALVE_ANT_0932349-52, at VALVE_ANT_0932350-52	12/11/2018-12/19/2018	Steam Keys	Price	In an email exchange, Valve told a publisher, who requested Steam Keys for pre-orders, that "if you're selling the game elsewhere via Steam key, we'd of course want the opportunity to make the same offer on Steam- it wouldn't be OK to use keys in a way that disadvantaged our store."
VALVE_ANT_0453006-012, at VALVE_ANT_0453006, VALVE_ANT_0453009-010	1/17/2019-1/22/2019	Steam Keys	Both	Developer [REDACTED] writes to Valve that it is negotiating with [REDACTED] for a promotional free giveaway, and asks how to coordinate a mass key allocation. Valve responds to the developer: "[W]e would like to offer the same deal on or before to Steam customers as well," and asks about [REDACTED] plans to offer the same giveaway promotion on Steam. Later in the email chain, a Valve employee reiterates the three commitments a developer must agree to when requesting Steam Keys.
VALVE_ANT_1024002-04, at VALVE_ANT_1024003-04	1/21/2019-1/22/2019	Steam Keys	Price	Valve emails the developer about their request for Steam keys for his game, [REDACTED]. Valve tells the developer, "It looks like you're requesting [REDACTED] Steam Keys for the [REDACTED], so I thought I'd kick off a conversation with you to find out more about the request and see what plans you have to offer a similar deal for Steam customers. It looks like your game is currently selling for \$19.99 on Steam - we're happy to work with you to get keys for this promotion, but as always, we want to make sure Steam customers are being treated fairly and are getting the same kind of deal on the game on Steam at the same time." The developer responds, saying they are open to a large discount on Steam.
VALVE_ANT_0094642-44, at VALVE_ANT_0094643	2/8/2019-5/9/2019	Content	Price	In an email chain, Valve and [REDACTED] employees discuss bringing [REDACTED] catalog to Steam. Valve notes that, to bring [REDACTED] to Steam, it would be important for "Steam [to offer] [REDACTED] and [REDACTED]" and to offer the "[s]ame prices as [REDACTED]"
VALVE_ANT_0936452-463, at VALVE_ANT_0936452-53	2/15/2019-7/17/2019	Steam Keys	Price	[REDACTED] emails Valve, telling them they're "interested in participating in another [REDACTED] deal" because "it'll widen our audience more and we'd really like to attract new players to our every growing community." The developer tells Valve that [REDACTED] is requesting [REDACTED] Steam keys and asks Valve's thoughts. Valve responds to the developer: "If you do opt to move ahead with a bundle, that's your call - but the expectation is that you'd also offer a similarly aggressive discount on Steam." The developer decides not to move forward with the [REDACTED] deal because they "don't want to mistakenly put the game on too much of a sale."
VALVE_ANT_0610426-27, at VALVE_ANT_0610426	3/14/2019-3/15/2019	Steam Keys	Price	Valve responds to Developer [REDACTED] asking about recent Steam Key request denials by offering reasons why Valve denies key requests: "[T]he general feeling is: If you're legitimately selling a game fairly across a bunch of stores, you can have all the keys you need. But if you want infinite keys to undercut your price on Steam and disadvantage Steam customers, we might reject those requests. We don't really care which store or bundle site the keys are headed towards, and that's not apart of the decision criteria for us- instead, it's how the keys are being sold, and whether or not fair and equivalent offers are happening on Steam. . . . [W]e are not interested in providing Steam keys if they're used to perpetually disadvantage Steam customers."

Bates Number	Date	Type of Product (Content or Steam Keys)	Type of Parity (Content or Price)	PMFN Context and Quote
VALVE_ANT_2422876-78, at VALVE_ANT_2422876-77	3/19/2019-3/22/2019	Steam Keys	Price	Valve responds to developer [REDACTED] inquiry about a key request: "It's fine to have a ton of keys to sell in a bargain or discount or bundle, but it's really important that Steam customers don't get left in the dust. The lifetime key usage (and this additional [REDACTED] seems way out of whack with how the game has been sold on Steam. . . . If you're interested in running offers where the true price of the game to customers is much lower, that's totally your call! But you'd need to do that on Steam too, not just on other stores via Steam keys. We wouldn't provide keys for this big of a price mismatch, but we'd love to work with you to find time to make equivalent offers to Steam customers and help you think about what that price point is - it's really hard to instantly equate one game's value inside of a month-long bundle, to that same game's equivalent discount, but it's a conversation worth having." The developer responds, telling Valve they "depend entirely on the revenue from the planned [REDACTED] and without it, [REDACTED] will be no more. We really need to be a part of that bundle." The developer also agrees to running a similar discount on Steam.
VALVE_ANT_0516011-18, at VALVE_ANT_0516012-14	3/26/2019-4/2/2019	Steam Keys	Price	In response to a publisher's request for Steam Keys for [REDACTED] store, Valve stated that based on how the publisher's games were advertised, "we don't think \$12 for one game and \$12 for 5-10 games is a good comparison or fair treatment of our users[.]" so the "remedy would be getting the better price on Steam as well[.]"
VALVE_ANT_2625156-59	10/31/2019-11/13/2019	Steam Keys	Price	Valve reached out to publisher [REDACTED] to express concern about the game [REDACTED] being sold for less [REDACTED] than on Steam: "Obviously we think it's great for the game to go into the subscription but there's a bunch of concern as usual about throwing it up somewhere else at a way better price than we've been able to offer our users." Valve suggests putting off publisher sale until after agreement can be reached on this issue. [REDACTED] protests against any pricing adjustment, but attempts to placate Valve using examples of other games being discounted on Steam: "[R]est assured that the other 2 published games going in the subscription between now and the publisher sale are later in their discounting lifecycle. So, no need to postpone the entire publishing sale because of our discussion about [REDACTED]."
VALVE_ANT_1813388-390, at VALVE_ANT_1813388-89	11/4/2019-11/6/2019	Steam Keys	Price	[REDACTED] emails Valve, looking to set discounts for a game. The developer proposes a variety of different discount rates and asks whether there is a chance of getting features for a Daily Deal. In its response, Valve notes that the game is a part of a bundle and states, "We'd expect it to be about that rate on Steam when it goes on discount too, just to make sure Steam customers get a fair shot at those super low prices[.]"
VALVE_ANT_2572410-414, at VALVE_ANT_2572411	11/18/2019-11/22/2019	Steam Keys	Price	In an email regarding Steam Key request, Valve told a developer that "[w]e provide Steam keys for free as a service and we're happy to take on the costs associated with that (bandwidth, support, etc) - but in exchange devs agree to treat Steam's customers fairly and provide a similar deal to what they're getting elsewhere. We don't provide keys for games that are clearly not intended to be sold on Steam."
VALVE_ANT_1169871	11/25/2019	Content	Price	In an email, Valve states, "[REDACTED] from [REDACTED] called this morning to give us a heads up that, during the Autumn Sale, [REDACTED] would have a better discount on [REDACTED] than on Steam. They are aware that this means we won't be able to market [REDACTED] on Steam during the Autumn Sale, because Steam customers are at a disadvantage." The email also states, "We have been clear that for the upcoming [REDACTED] launch on Steam, we won't be able to launch the game if Steam customers are being disadvantaged."
VALVE_ANT_1198639-644, at VALVE_ANT_1198639, VALVE_ANT_1198641-42	11/27/2019-12/6/2019	Steam Keys	Price	Valve responds to a developer's Steam Key request by asking, "Do you have any information to share on how the game is going to be priced in the offer? The vast majority of [REDACTED] are paying \$12 for a bunch of games but the discounted price on Steam is \$20 for just the one game. So it'd be really important to us that the aggressive deep discounting on [REDACTED] comes to Steam as well. Otherwise we wouldn't be able to provide keys." Later in the chain, Valve continues to condition key access on parity: "[I]t's ultimately up to you guys and [REDACTED] to pursue the pricing strategy that you wish, and we'll support you either way! But if that strategy is to do a low-price offer with Steam keys, the low price has to come to Steam as well[.]" The developer ultimately opts not to move forward with the [REDACTED] sale.
VALVE_ANT_1192756-770, at VALVE_ANT_1192758	1/27/2020-3/25/2020	Content	Price	In an email responding to a developer's request for a daily deal, Valve tells the developer that the "giveaway makes it really hard for us to market any compelling offer on Steam, at least any time in the near future. No bad blood on that, we know partners choose to do bulk payments for bundles and giveaways and we think y'all should pursue whatever offers are good for your business! But it does make it pretty impossible for us to turn around and advertise the game at 33% off a month later or something if it was just free or pennies somewhere else." Valve also states, "In terms of our relationship with customers, we're not really comfortable pushing special promotions to them when we know we're not actually competitive on price."

Bates Number	Date	Type of Product (Content or Steam Keys)	Type of Parity (Content or Price)	PMFN Context and Quote
VALVE_ANT_1706336-37, at VALVE_ANT_1706337	2/20/2020-2/26/2020	Steam Keys	Price	Valve emailed a developer about a large number of Steam Keys request: "Steam keys are free, and generally they're unlimited, but we really take seriously the requirements around making sure Steam customers get a fair shake. So, if participating in huge price cut bundles is part of the strategy, that's OK! But it's important to reflect on what an equivalent offer for Steam customers would be, and make sure they get a chance at that offer. For a \$30 or \$60 game, being bundled for just a few dollars is like a 99% discount, so you want to always weigh those bundle decisions against how you're planning to price on any other stores, Steam included." The developer apologized and told Valve "I believe we are on the same page in regards to this, but at the end of the day the fault resides with us for approving this internally without going through the proper due process."
VALVE_ANT_2526039-040, at VALVE_ANT_2526040	4/27/2020-4/28/2020	Steam Keys	Price	Valve reaches out to [REDACTED] telling them that they "saw the big batch of [REDACTED] key requests from a bunch of [REDACTED] titles and just wanted to check in Since most of these games have never done any kind of deep discounting on Steam, we'd want to make sure that whatever competitive offers you have planned elsewhere show up for Steam customers as well!"
VALVE_ANT_1192672	5/1/2020	Content	Price	In an email, a Valve employee tells a developer that "[y]ou're free to price however you want, but we always wish to provide our customers with a fair deal and the best possible price. So, if you wanted to disadvantage Steam customers by charging them a higher price, we would opt to not sell your game on our store. We want to make sure Steam users aren't getting a worse deal." The developer replies, saying he sees no problem working with Steam and "follow[ing its] orientation."
VALVE_ANT_1813218-222, at VALVE_ANT_1813218-19	7/4/2020	Content	Price	In an email to [REDACTED], Valve states, "Customers in your steam forums are reporting that the game is cheaper on the [REDACTED] - is that accurate?" [REDACTED] stated later in the email chain that they were taking steps to resolve the discrepancy.
VALVE_ANT_1193127-132, at VALVE_ANT_1193127-29	9/11/2020-9/18/2020	Content	Price	[REDACTED] emailed Valve saying that [REDACTED] was eager to test the waters with a 30 percent discount on Steam for its game [REDACTED]. Valve elevated the game to the "daily deal spot" but learned that [REDACTED] was running at a 50 percent off discount in the [REDACTED]. Valve confronted [REDACTED] about it, which maintained that the differential discounting made sense because of [REDACTED]. Valve informed [REDACTED] that the game had been removed from the "daily deal" and had been excluded from the [REDACTED] promotion. Valve then elevated the discussion to other members of the [REDACTED] team stating, "Yesterday it came to our attention that [REDACTED] was also on sale in [REDACTED] with a significantly better discount - so we removed it from the [REDACTED] page." [REDACTED] added its central marketing teams "for discount parity rules and awareness" and assured Valve that "to be clear we know that discount parity is essential on both stores, [REDACTED]."
VALVE_ANT_2415319-321, at VALVE_ANT_2415320	9/14/2020-9/15/2020	Steam Keys	Price	In an email chain, Valve employees discuss whether this pattern of offering a game on [REDACTED], then offering the discount on Steam the following month, is acceptable. One employee states that "[i]t's not ok to structure the bundle business for their own published games as a way to perpetually offer better pricing than our store." Another Valve employee says, "I think they are pushing the envelope here of the spirit of our rule, which is to give Steam customers a similar deal within a reasonable amount of time. In this case, having never run a discount on Steam before while asking for [REDACTED] of keys to do that on [REDACTED] first seems to cross the line in my mind. They will likely complain because they are technically doing what we told them they needed to do (get down to the baseline cost of the bundle/subscription, offer to Steam customers within reasonable amount of time) but there is a pattern here + no prior Steam discount and then Steam a month later feels like Steam customers are second class."
VALVE_ANT_2649701-02, at VALVE_ANT_2649701	10/6/2020-10/9/2020	Content	Price	[REDACTED] emails Valve, asking to be pointed to Steam's Publishing Standards so that they can "re-educate" themselves on publishing on Steam because "[t]he only two [things they] remember from year's [sic] past is that 1) no other store's name or logo can be shown or mentioned during a user's experience on Steam, and that 2) pricing and promotions require parity (i.e. no favoritism to other platforms in terms of pricing, sales, promos, etc.) [REDACTED]" Valve responds, providing the developer with the link to Steam's documentation and saying that "[w]e ask that pricing be consistent with other platforms, but you're allowed to run promotions outside of Steam on your own schedule. We just ask that Steam get similar opportunities as well."
VALVE_ANT_1220449-458, at VALVE_ANT_1220452-53, VALVE_ANT_1220456	10/6/2020-10/13/2020	Steam Keys	Content	Responding to [REDACTED] having exclusive DLC items not available on Steam, a Valve employee states, "As a rule of thumb we ask that anything you offer through other retailers are also available to Steam customers. It doesn't have to be exactly the same - but a comparable offer should be available to Steam customers." Later in the email chain, Valve says, "Regardless of where the exclusive content is being offered, we need to make sure customers who come to purchase games from our storefront aren't being offered a worse product than what's offered elsewhere." Even after the developer tries to explain that the exclusive offer is no longer available, Valve reiterates, "Whether we're talking about a Kickstarter or an offer on another storefront, our policy has always been to require material parity for things we sell on the Steam store."

Bates Number	Date	Type of Product (Content or Steam Keys)	Type of Parity (Content or Price)	PMFN Context and Quote
VALVE_ANT_1169932-33, at VALVE_ANT_1169933.	12/9/2020-12/15/2020	Steam Keys	Price	Valve emailed ██████ regarding the developer's request for Steam Keys, telling ██████ that "[w]e saw the ██████ request come in for ██████. We're okay with this, but since it's a Steam key, we don't want to have a worse offer running on Steam at the same time and ██████ is \$12. . . . Could we bring this discount up to 70% or 75% so we don't have a worse offer on Steam?"
VALVE_ANT_2527325-28, at VALVE_ANT_2527325-26	12/22/2020-12/24/2020	Content	Price	In an email to Valve, ██████ contends it is being sanctioned for having a 24 hour free give away on ██████, as Valve was unwilling to feature them in Steam sales as a result. Valve explains that "[w]e just have an ongoing rule-of-thumb re: let's make sure our promos don't look stupid. If PublisherX wants to sell a game at 80% off on ██████ and 50% off on Steam. . . . we can't stop them! But we're not going to promote it until the Steam players get 80%, too. Holding off promo after ██████ or ██████ is just an extension of that same behavior we've always had."
VALVE_ANT_2527343-44, at VALVE_ANT_2527343	1/11/2021	Steam Keys	Price	█████ reaches out to Valve, asking for approval for a Steam Key request. Valve responds to the developer: "There's basically two things we always try to look out for with those big key requests. 1. Steam customers getting treated fairly. This is the most important one. . . . We wouldn't approve keys for something like that unless the developer was also going to offer Steam customers a dramatically lower price, too."
VALVE_ANT_0097350-362, at VALVE_ANT_0097356-57	1/24/2021-2/2/2021	Steam Keys	Price	In an email to developer ██████, a Valve employee states, "So, first and foremost- it's super important that Steam customers get treated fairly in this process. Selling the game via Steam key on other stores is fine, but Steam customers need to get a shot at the same offer, price discount, etc as you're offering anywhere else. It's not OK to use Valve and Steam as the service provider for offering bonus content and better pricing but then cut Steam shoppers out of the loop- so we'd want to make sure the better price and special offer comes to Steam players as well." ██████ clarifies: "all external store pages will reflect the pricing on Steam."
VALVE_ANT_1708862-64, at VALVE_ANT_1708862	4/2/2021-7/13/2021	Steam Keys	Price	In response to a developer's question regarding selling on other stores, Valve states, "We do provide steam keys for free to sell equivalently on other stores, or your own store. I'd recommend sitting down to read the full rundown at [Steam Keys Documentation.]"
VALVE_ANT_2899016-075, at VALVE_ANT_2899023-25	7/30/2021-5/25/2023	Content	Content	█████ emails Valve, asking whether offering achievements in their game (█████) on other platforms, without offering those achievements on Steam would "upset Valve" because "there won't be total parity between the platforms now." Valve responds to the developer: "Our bright-line rule on parity and feature stuff just boils down to the PC version. So if PC users are getting a bunch of new achievements, Steam customers should have access to those too. . . . Both in terms of contract obligation stuff, and in terms of how we think about players, I'd argue 'Steam users miss out' is worse than 'Some players are sad about DLC-only achievements[.]' You'll have the latter feedback about DLC-only achievements everywhere you sell the game, and that's OK - not the end of the world! But we don't want Steam users to be missing out on something that other PC players get." ██████ agrees to offer the achievements on Steam.
VALVE_ANT_1220287-89, at VALVE_ANT_1220288-89	12/16/2021-12/17/2021	Steam Keys	Price	In response to a Steam Key request, Valve inquires about the purpose of the keys, and when they learn they are for a free giveaway on ██████, they insist on a similar giveaway promotion on Steam. Later in the chain a Valve employee states, "if you're using steam keys to give away your game, we ask that you run the same promo on [S]team."
VALVE_ANT_0491235-36	3/16/2022	Steam Keys	Price	A developer asked Valve to clarify its policy regarding Steam Keys. Valve told the developer that "[w]e do ask that when you use keys to sell your game on other stores, you do so in a similar way to how you sell your game on Steam. It is important that you don't give Steam customers a worse deal."
VALVE_ANT_1210287-090, at VALVE_ANT_1210287-89	6/20/2022-6/28/2022	Content	Content	In an email to ██████, a Valve employee states, "We ask that digital content you offer outside of Steam be made available to Steam users directly, so that the Steam version is not disadvantaged."
VALVE_ANT_1219134-35	7/8/2022-7/19/2022	Content	Price	A ██████ internal email regarding the denial for a key request states, "Below is their standard guidelines for these key requests, so they are probably just trying to ensure that we aren't taking significant business away from the direct Steam purchase path. . . . Steam Keys are intended to help partners run their other physical and digital businesses by matching offers that exist on Steam. It's important that Steam customers are treated fairly and that offers using keys are materially consistent with offers on Steam. It is not okay to sell keys for products that aren't also available for sale on Steam at the same time. Make sure Steam customers are getting a fair offer relative to any other stores where you distribute Steam keys, especially at launch." Later in the email chain a ██████ employee states, "I am handling this request with Steam. Cassidy already reached out to me."
VALVE_ANT_1204851-53, at VALVE_ANT_1204851-52	7/13/2022-7/19/2022	Steam Keys	Price	In internal discussion, a Valve employee states, "Any offer that sets up a Steam player for a worse deal, worse timing, worse content, is a nonstarter- it's out of line with the promises of Steam keys, but it's also a big disconnect from how we run our business. (It's cool that they run a ██████ but that doesn't really change our calculus on Steam keys)."

Bates Number	Date	Type of Product (Content or Steam Keys)	Type of Parity (Content or Price)	PMFN Context and Quote
VALVE_ANT_0105642-45, at VALVE_ANT_0105643-44.	7/27/2022-7/28/2022	Steam Keys	Price	In response to ██████ request for Steam Keys, Valve told the developer that "[i]t looks like the deepest discount you've run for ██████ is 33%, in our last curated promotion. That put the game on sale from \$50 down to about \$34. The ██████ subscription runs about \$12, and that also includes a number of other games. Recently, they've been running promotions that put the price of the monthly subscription down to just \$6 a month. Even at \$12, that's a much deeper discount than you've offered Steam customers, and is equivalent to over 75% off. Are you planning to offer Steam customers a similar deal?"
VALVE_ANT_0558338-362, at VALVE_ANT_0558338-340	8/9/2022-10/6/2022	Both	Price	A developer asks about participating in sales off of Steam and in response, Valve states, "You can definitely participate in sales off-steam, and we don't want to discourage or prevent that. But in terms of promo visibility, regardless of Steam keys, we do try to think really hard about customers and put ourselves in their shoes. If the game is discounted down to \$15 on Steam, and then it goes into a bundle or subscription with ten other games for \$6 a few days or weeks later. . . that really sucks for the people who bought at the way higher price! Why did you market me a \$15 price if the game is actually selling for more like \$1 somewhere else? For instance, we'd probably want to avoid running a 50% discount on a game if it was going to be a free giveaway on another store a week later, even if the giveaway had nothing to do with Steam Keys."
VALVE_ANT_1167505-506, at VALVE_ANT_1167505-506.	9/8/2022-9/9/2022	Content	Price	Valve emailed ██████ regarding discounting on ██████, telling the developer that "[i]n this case, ██████ customers are clearly being given a much, much better offer than Steam customers (the equivalent of a huge discount), while the promotions are being run at the same time. Of course, you choose the discount you'd like to run on Steam and you're free to continue to run the discount, but we're not going to promote a significantly worse deal to Steam customers on the front page when customers can see it's much cheaper elsewhere, so we've taken down the Weekend Deal."
VALVE_ANT_1049721-23, at VALVE_ANT_1049721-22	10/31/2022	Steam Keys	Price	Developer ██████ emails Valve asking why Steam Key requests for two of its games were denied. Valve responds, stating that one of the "two big reasons why key requests would get rejected" is a "huge mismatch in how customers on Steam are getting treated. (If you had a \$20 game on Steam that ran a 25% discount last week, and you wanted to sell it for a dollar in a bundle. . . that'd probably get rejected, since key requests ask the publisher to confirm they're giving Steam customers a fair shake- we'd want the Steam shoppers to be getting the super good deal too!)." The reason for rejection was revealed to be unclaimed keys rather than pricing differences. Valve notes that "in terms of the way you folks are discounting the games on Steam I think you're fine."

Reply Attachment C-1

Airbnb Financials (2018–2023)

Metric	2018	2019	2020	2021	2022	2023	Total
	[A]	[B]	[C]	[D]	[E]	[F]	[G]
Revenues	\$ 3,651,985,000	\$ 4,805,239,000	\$ 3,378,000,000	\$ 5,992,000,000	\$ 8,399,000,000	\$ 9,917,000,000	\$ 36,143,224,000
Cost of revenues	\$ 864,032,000	\$ 1,196,313,000	\$ 876,000,000	\$ 1,156,000,000	\$ 1,499,000,000	\$ 1,703,000,000	\$ 7,294,345,000
Gross margin percentage	76.3%	75.1%	74.1%	80.7%	82.2%	82.8%	79.8%
Operating expenses							
Operations and support	\$ 609,202,000	\$ 815,074,000	\$ 878,000,000	\$ 847,000,000	\$ 1,041,000,000	\$ 1,186,000,000	\$ 5,376,276,000
Product development	\$ 579,193,000	\$ 976,695,000	\$ 2,753,000,000	\$ 1,425,000,000	\$ 1,502,000,000	\$ 1,722,000,000	\$ 8,957,888,000
Sales and marketing	\$ 1,101,327,000	\$ 1,621,519,000	\$ 1,175,000,000	\$ 1,186,000,000	\$ 1,516,000,000	\$ 1,763,000,000	\$ 8,362,846,000
General and administrative	\$ 479,487,000	\$ 697,181,000	\$ 1,135,000,000	\$ 836,000,000	\$ 950,000,000	\$ 2,025,000,000	\$ 6,122,668,000
Restructuring charges	\$ -	\$ -	\$ 151,000,000	\$ 113,000,000	\$ 89,000,000	\$ -	\$ 353,000,000
Total costs and operating expenses	\$ 3,633,241,000	\$ 5,306,782,000	\$ 6,968,000,000	\$ 5,563,000,000	\$ 6,597,000,000	\$ 8,399,000,000	\$ 36,467,023,000
Income from operations	\$ 18,744,000	\$ (501,543,000)	\$ (3,590,000,000)	\$ 429,000,000	\$ 1,802,000,000	\$ 1,518,000,000	\$ (323,799,000)
Operating margin percentage	0.5%	-10.4%	-106.3%	7.2%	21.5%	15.3%	-0.9%

Notes and sources:

[A]–[B] Airbnb, Form 10-K, 2020, at 83.

[C]–[D] Airbnb, Form 10-K, 2022, at 70.

[E]–[F] Airbnb, Form 10-K, 2023, at 57.

[G] = Sum of [A]–[F].

Gross margin percentage = (Revenues - Cost of revenues) / Revenues.

Total costs and operating expenses = Cost of revenues + sum of all Operating expenses.

Income from operations = Revenues - Total costs and operating expenses.

Operating margin percentage = Income from operations / Revenues.

Reply Attachment C-2

Etsy Financials (2018–2023)

Metric	2018	2019	2020	2021	2022	2023	Total
	[A]	[B]	[C]	[D]	[E]	[F]	[G]
Revenues	\$ 603,693	\$ 818,379	\$ 1,725,625	\$ 2,329,114	\$ 2,566,111	\$ 2,748,377	\$ 10,791,299
Cost of revenues	\$ 190,762	\$ 271,036	\$ 464,745	\$ 654,512	\$ 744,592	\$ 828,675	\$ 3,154,322
Gross margin percentage	68.4%	66.9%	73.1%	71.9%	71.0%	69.8%	70.8%
Operating expenses							
Marketing	\$ 158,013	\$ 215,570	\$ 500,756	\$ 654,804	\$ 710,399	\$ 759,196	\$ 2,998,738
Product development	\$ 97,249	\$ 121,878	\$ 180,080	\$ 271,535	\$ 412,398	\$ 469,332	\$ 1,552,472
General and administrative	\$ 82,883	\$ 121,134	\$ 156,035	\$ 282,531	\$ 312,260	\$ 343,242	\$ 1,298,085
Goodwill/asset impairment	\$ -	\$ -	\$ -	\$ -	\$ 1,045,022	\$ 68,091	\$ 1,113,113
Total costs and operating expenses	\$ 528,907	\$ 729,618	\$ 1,301,616	\$ 1,863,382	\$ 3,224,671	\$ 2,468,536	\$ 10,116,730
Income from operations	\$ 74,786	\$ 88,761	\$ 424,009	\$ 465,732	\$ (658,560)	\$ 279,841	\$ 674,569
Operating margin percentage	12.4%	10.8%	24.6%	20.0%	-25.7%	10.2%	6.3%

*Notes and sources:**In thousands of USD.*

[A]–[B] Etsy, Form 10-K, 2020, at 100.

[C] Etsy, Form 10-K, 2022, at 98.

[D]–[F] Etsy, Form 10-K, 2023, at 97.

[G] = Sum of [A]–[F].

Gross margin percentage = (Revenues - Cost of revenues) / Revenues.

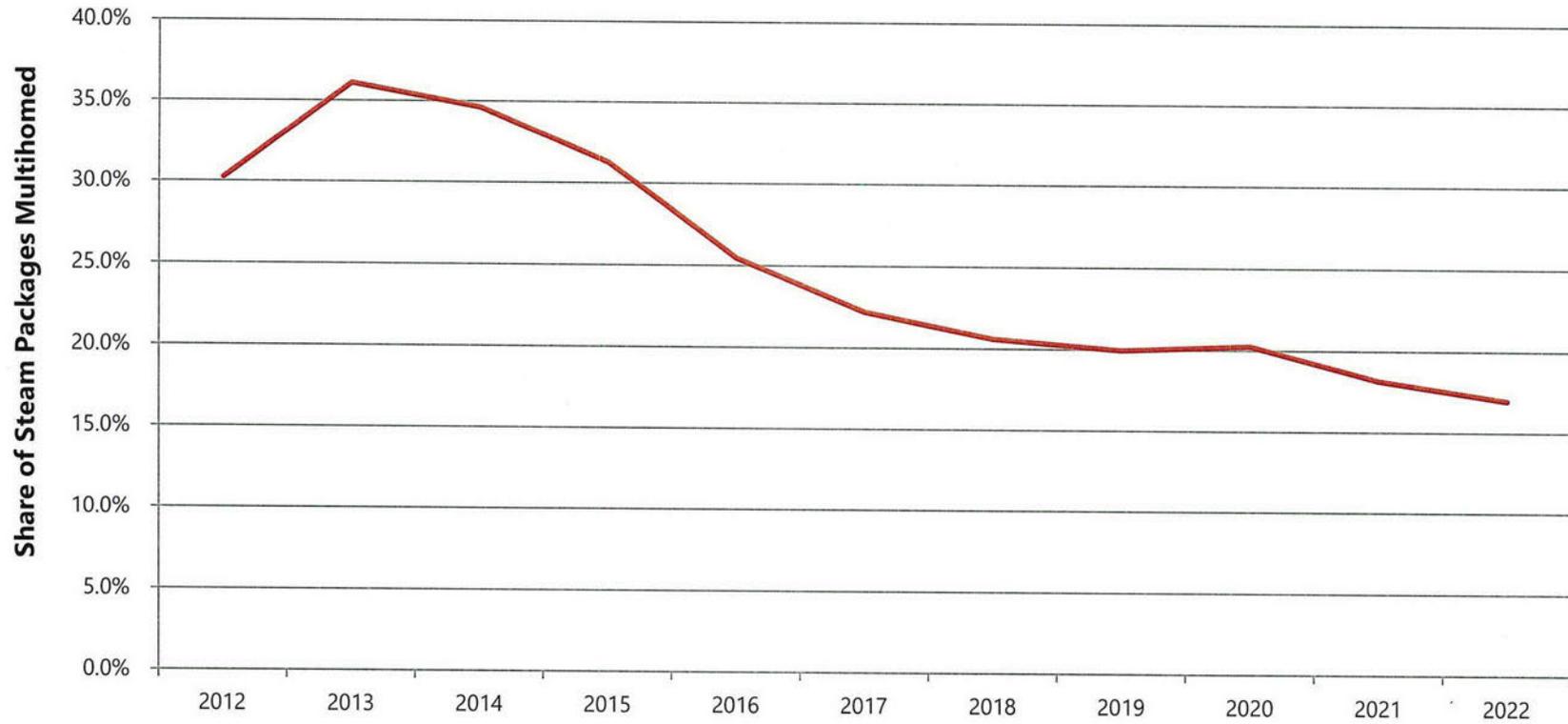
Total costs and operating expenses = Cost of revenues + sum of all Operating expenses.

Income from operations = Revenues - Total costs and operating expenses.

Operating margin percentage = Income from operations / Revenues.

Reply Attachment D-1

Share of Steam Packages Multihomed Over Time



Notes and sources:

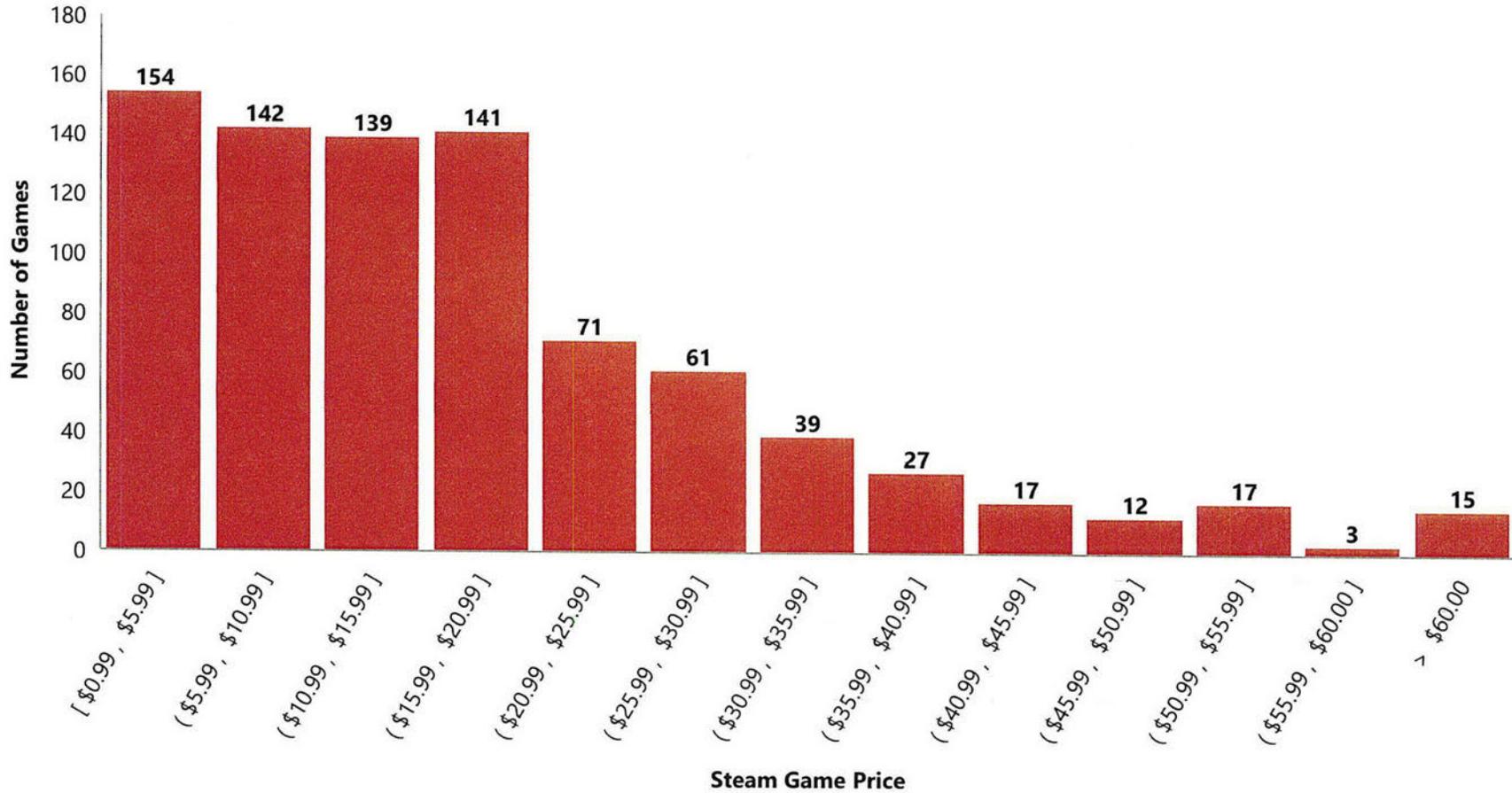
See: "11_Multihoming.R".

Data are from Valve-produced transaction data and Exhibit 19 from Dr. Chiou's Report

Data are limited to non-hardware, non-Valve developed packages, and games within period included in Dr. Chiou's Exhibit 19 analysis, by year

Reply Attachment D-2

Average Steam Prices of Games Dr. Chiou Identifies as 5% Cheaper on EGS



Notes and sources:

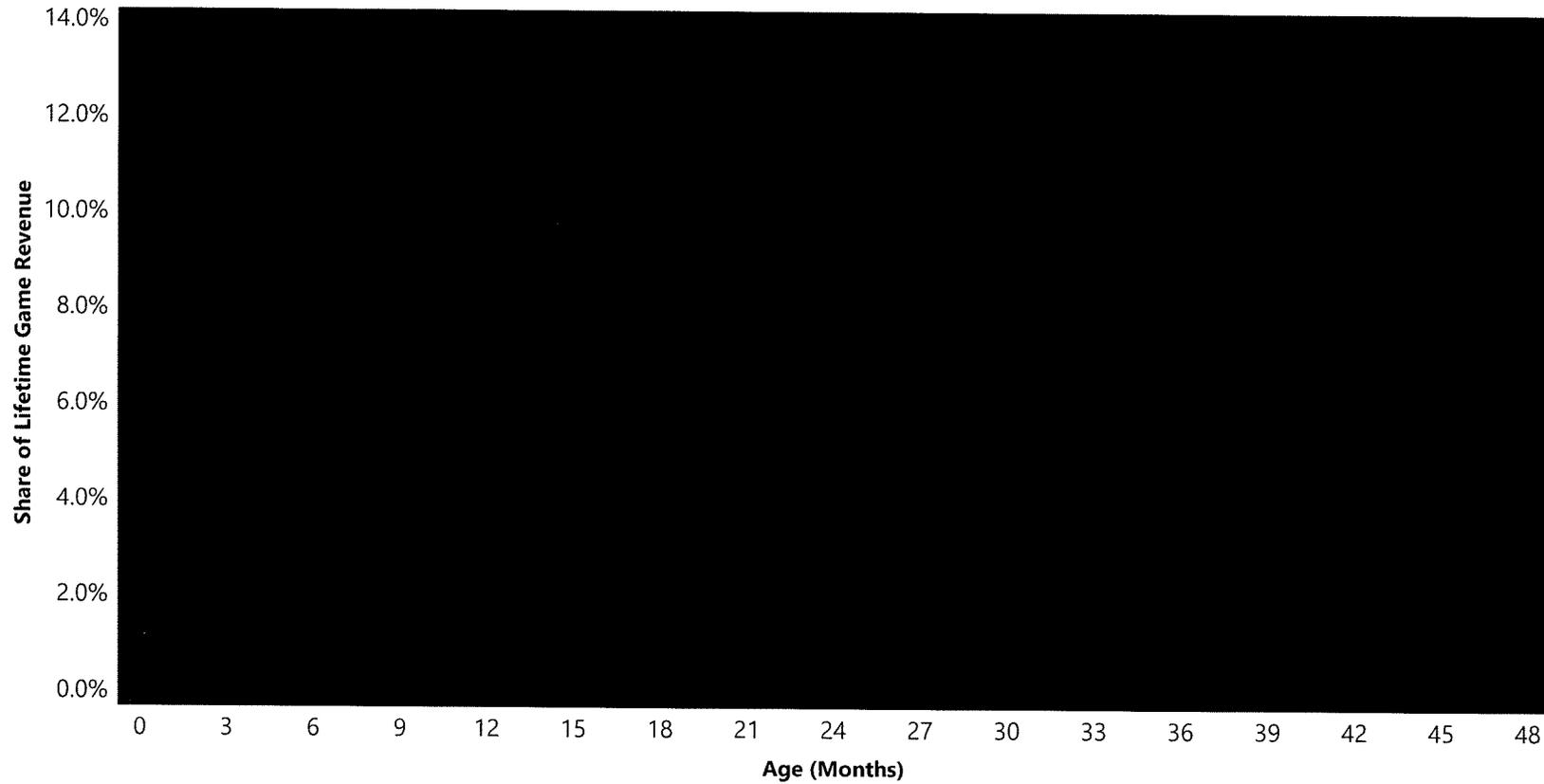
See: "09_Average_Prices_ITAD_Analysis_Flagged_Games.R".

Data are from ITAD price data produced by Dr. Chiou.

Average prices are simple averages taken over days games have been offered on both Steam and the Epic Games Store.

Reply Attachment D-3

Monthly Share of Lifetime Revenues by Game Time Since Release



Notes and sources:

See: "10_Game_Age_Monthly_Revenues.R".

Data are from Valve-produced transaction data.

Data are limited to non-hardware, non-Valve developed, non-preorder/prepurchase base games, transacted in the U.S.

Reply Attachment E-1

Top 25 Base Prices by Revenue (2018–2022)

Base Price	Total Revenue	% of total
	[A]	[B]
\$ 59.99		
\$ 19.99		
\$ 39.99		
\$ 29.99		
\$ 24.99		
\$ 14.99		
\$ 49.99		
\$ 9.99		
\$ 99.99		
\$ 4.99		
\$ 69.99		
\$ 34.99		
\$ 79.99		
\$ 44.99		
\$ 89.99		
\$ 11.99		
\$ 7.99		
\$ 12.99		
\$ 13.99		
\$ 6.99		
\$ 3.99		
\$ 2.99		
\$ 17.99		
\$ 5.99		
\$ 8.99		
Other		
Total		

Notes and sources:

See: "13_Passthrough FPP Analysis.R".

Data from Valve-produced transaction data.

[A] Total U.S. revenue associated with top 25 prices present on Steam, excluding in-app purchases and hardware, in U.S.D.

[B] = [A] / ([A] at Total).

Reply Attachment E-2

U.S. Revenues Associated with Base Prices in Pass-through Analysis (2018–2022)

Base Price	Revenue in Sample [A]	Revenue Out of Sample [B]	Revenue Total [C]
\$ 59.99			
\$ 19.99			
\$ 39.99			
\$ 29.99			
\$ 24.99			
\$ 14.99			
\$ 49.99			
\$ 9.99			
\$ 34.99			
\$ 44.99			
\$ 69.99			
\$ 12.99			
\$ 79.99			
\$ 17.99			
\$ 89.99			
\$ 30.00			
\$ 16.99			
\$ 2.99			
\$ 0.99			
\$ 74.99			
\$ 20.00			
Total			

Notes and sources:

See: "13_Passthrough FPP Analysis.R".

Data from Valve-produced transaction data.

Revenues do not include hardware or in-app purchases, and are limited to base games.

[A] Revenues within sample of AppIDs analyzed in Opening Report pass-through analysis corresponding with base prices charged for AppIDs in sample.

[B] Revenues outside of sample of AppIDs analyzed in Opening Report pass-through analysis corresponding with base prices charged for AppIDs in sample.

[C] = [A] + [B].

Reply Attachment E-3

U.S. Revenues Associated with Sale Prices in Pass-through Analysis (2018–2022)

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 19.99			
\$ 59.99			
\$ 29.99			
\$ 39.99			
\$ 14.99			
\$ 9.99			
\$ 24.99			
\$ 49.99			
\$ 4.99			
\$ 17.99			
\$ 15.99			
\$ 11.99			
\$ 13.99			
\$ 34.99			
\$ 23.99			
\$ 7.49			
\$ 44.99			
\$ 8.99			
\$ 7.99			
\$ 22.49			
\$ 69.99			
\$ 19.79			
\$ 5.99			
\$ 26.99			
\$ 35.99			
\$ 3.99			
\$ 16.99			
\$ 9.89			
\$ 12.99			
\$ 2.99			
\$ 13.49			
\$ 27.99			
\$ 12.49			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 6.99			
\$ 13.39			
\$ 17.49			
\$ 47.99			
\$ 26.79			
\$ 31.99			
\$ 89.99			
\$ 20.99			
\$ 38.99			
\$ 18.74			
\$ 41.99			
\$ 40.19			
\$ 30.00			
\$ 31.49			
\$ 4.49			
\$ 11.24			
\$ 1.99			
\$ 12.59			
\$ 19.49			
\$ 39.59			
\$ 10.49			
\$ 37.49			
\$ 20.39			
\$ 14.39			
\$ 53.99			
\$ 4.79			
\$ 2.49			
\$ 6.79			
\$ 79.99			
\$ 12.74			
\$ 8.49			
\$ 25.49			
\$ 10.04			
\$ 10.79			
\$ 10.99			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 9.59			
\$ 21.24			
\$ 10.19			
\$ 20.09			
\$ 18.99			
\$ 16.74			
\$ 25.99			
\$ 9.74			
\$ 0.99			
\$ 6.24			
\$ 16.24			
\$ 40.49			
\$ 13.59			
\$ 6.74			
\$ 8.74			
\$ 5.09			
\$ 7.19			
\$ 13.19			
\$ 16.49			
\$ 1.49			
\$ 16.19			
\$ 11.89			
\$ 4.94			
\$ 11.69			
\$ 5.39			
\$ 15.29			
\$ 11.19			
\$ 42.49			
\$ 33.99			
\$ 3.59			
\$ 6.59			
\$ 14.79			
\$ 8.09			
\$ 20.24			
\$ 14.24			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 9.49			
\$ 10.39			
\$ 3.39			
\$ 8.24			
\$ 23.44			
\$ 28.49			
\$ 55.99			
\$ 5.00			
\$ 4.24			
\$ 30.59			
\$ 21.59			
\$ 10.00			
\$ 15.74			
\$ 6.29			
\$ 2.24			
\$ 12.79			
\$ 32.49			
\$ 18.39			
\$ 7.79			
\$ 6.39			
\$ 11.39			
\$ 3.24			
\$ 13.74			
\$ 33.74			
\$ 20.00			
\$ 34.79			
\$ 16.65			
\$ 32.39			
\$ 24.49			
\$ 9.90			
\$ 7.50			
\$ 8.39			
\$ 74.99			
\$ 62.99			
\$ 5.59			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 32.99			
\$ 6.37			
\$ 19.80			
\$ 2.09			
\$ 30.14			
\$ 25.19			
\$ 15.19			
\$ 7.64			
\$ 22.79			
\$ 33.19			
\$ 15.59			
\$ 28.79			
\$ 1.19			
\$ 3.19			
\$ 23.27			
\$ 9.44			
\$ 11.04			
\$ 23.74			
\$ 12.14			
\$ 5.62			
\$ 8.69			
\$ 8.00			
\$ 6.89			
\$ 6.00			
\$ 14.44			
\$ 17.09			
\$ 4.59			
\$ 9.37			
\$ 37.99			
\$ 12.05			
\$ 12.00			
\$ 37.79			
\$ 14.69			
\$ 15.39			
\$ 7.59			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 10.12			
\$ 5.94			
\$ 50.99			
\$ 12.34			
\$ 2.00			
\$ 5.49			
\$ 19.19			
\$ 13.29			
\$ 16.79			
\$ 13.80			
\$ 5.77			
\$ 17.81			
\$ 4.80			
\$ 34.39			
\$ 5.69			
\$ 7.20			
\$ 36.79			
\$ 6.80			
\$ 2.50			
\$ 0.89			
\$ 3.60			
\$ 3.51			
\$ 52.49			
\$ 12.39			
\$ 10.62			
\$ 11.87			
\$ 21.89			
\$ 11.38			
\$ 21.37			
\$ 16.87			
\$ 9.29			
\$ 10.40			
\$ 25.79			
\$ 8.63			
\$ 6.45			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 8.03			
\$ 4.68			
\$ 10.71			
\$ 1.80			
\$ 2.25			
\$ 5.33			
\$ 18.00			
\$ 14.84			
\$ 30.39			
\$ 0.72			
\$ 1.00			
\$ 4.00			
\$ 7.00			
\$ 3.09			
\$ 17.50			
\$ 19.24			
\$ 71.99			
\$ 17.79			
\$ 4.39			
\$ 9.78			
\$ 8.84			
\$ 0.50			
\$ 1.87			
\$ 7.35			
\$ 7.39			
\$ 11.33			
\$ 12.89			
\$ 1.56			
\$ 6.64			
\$ 8.54			
\$ 5.30			
\$ 9.71			
\$ 33.24			
\$ 12.95			
\$ 18.08			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 4.43			
\$ 14.87			
\$ 14.62			
\$ 15.83			
\$ 16.00			
\$ 30.79			
\$ 11.09			
\$ 27.59			
\$ 8.59			
\$ 10.67			
\$ 13.34			
\$ 4.45			
\$ 6.15			
\$ 1.68			
\$ 4.67			
\$ 38.49			
\$ 2.87			
\$ 10.31			
\$ 45.49			
\$ 7.89			
\$ 12.30			
\$ 6.25			
\$ 22.94			
\$ 11.54			
\$ 7.30			
\$ 26.59			
\$ 1.25			
\$ 14.71			
\$ 8.89			
\$ 5.02			
\$ 4.64			
\$ 2.16			
\$ 6.63			
\$ 0.60			
\$ 9.19			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 0.75			
\$ 17.00			
\$ 1.20			
\$ 29.09			
\$ 5.20			
\$ 9.21			
\$ 67.49			
\$ 44.39			
\$ 3.20			
\$ 6.07			
\$ 7.67			
\$ 15.79			
\$ 19.94			
\$ 36.39			
\$ 5.91			
\$ 53.39			
\$ 15.07			
\$ 16.07			
\$ 10.88			
\$ 11.30			
\$ 10.20			
\$ 8.15			
\$ 13.12			
\$ 8.12			
\$ 31.59			
\$ 28.85			
\$ 5.87			
\$ 14.34			
\$ 15.60			
\$ 10.94			
\$ 13.60			
\$ 5.73			
\$ 8.40			
\$ 48.59			
\$ 12.18			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 14.49			
\$ 7.44			
\$ 7.87			
\$ 52.79			
\$ 4.48			
\$ 16.82			
\$ 5.60			
\$ 6.13			
\$ 6.75			
\$ 8.87			
\$ 31.19			
\$ 0.96			
\$ 5.04			
\$ 10.70			
\$ 6.65			
\$ 15.04			
\$ 6.83			
\$ 10.80			
\$ 15.57			
\$ 11.03			
\$ 39.14			
\$ 31.87			
\$ 4.12			
\$ 5.47			
\$ 7.55			
\$ 13.20			
\$ 19.09			
\$ 19.70			
\$ 6.12			
\$ 8.28			
\$ 7.53			
\$ 6.71			
\$ 0.53			
\$ 4.25			
\$ 10.34			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 3.96			
\$ 9.11			
\$ 5.74			
\$ 2.30			
\$ 0.62			
\$ 49.19			
\$ 11.74			
\$ 18.75			
\$ 5.27			
\$ 11.84			
\$ 11.55			
\$ 2.28			
\$ 2.04			
\$ 6.43			
\$ 3.12			
\$ 7.73			
\$ 20.36			
\$ 12.40			
\$ 11.25			
\$ 24.16			
\$ 10.46			
\$ 9.83			
\$ 9.62			
\$ 8.53			
\$ 7.82			
\$ 7.77			
\$ 9.22			
\$ 3.72			
\$ 18.91			
\$ 11.20			
\$ 7.13			
\$ 7.70			
\$ 5.44			
\$ 18.52			
\$ 0.25			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 1.08			
\$ 7.60			
\$ 5.65			
\$ 9.65			
\$ 13.85			
\$ 5.32			
\$ 60.79			
\$ 21.63			
\$ 35.39			
\$ 8.50			
\$ 24.22			
\$ 21.82			
\$ 41.39			
\$ 6.87			
\$ 6.28			
\$ 7.37			
\$ 4.88			
\$ 13.47			
\$ 5.34			
\$ 26.18			
\$ 17.82			
\$ 36.89			
\$ 7.97			
\$ 18.61			
\$ 17.45			
\$ 11.22			
\$ 15.70			
\$ 16.91			
\$ 10.56			
\$ 24.60			
\$ 25.80			
\$ 7.31			
\$ 7.21			
\$ 7.02			
\$ 29.40			

Sale Price	Revenue in Sample [A]	Revenues Out of Sample [B]	Revenue Total [C]
\$ 18.95			
\$ 11.06			
\$ 32.19			
\$ 8.16			
Total			

Notes and sources:

See: "13_Passthrough FPP Analysis.R".

Data from Valve-produced transaction data.

Revenues do not include hardware or in-app purchases, and are limited to base games

[A] Revenues within sample of AppIDs analyzed in Opening Report pass-through analysis corresponding with sale prices charged for AppIDs in sample.

[B] Revenues outside of sample of AppIDs analyzed in Opening Report pass-through analysis corresponding with sale prices charged for AppIDs in sample

[C] = [A] + [B].

Reply Attachment E-4

Summary of Focal Point Pricing for Games in Pass-through Analysis Sample

Metric	Revenue Covered By Prices of AppIDs in Sample [A]	Total U.S. Base Game Revenue (2018-2022) [B]	Coverage Share [C]
Base prices			93.0%
Sale prices			95.1%

Notes and sources:

See: "13_Passthrough FPP Analysis.R".

Data from Valve-produced transaction data.

[A] Reply Attachment E-2 and Reply Attachment E-3 at Total for Revenue Total.

[B] Total revenue for all base games on Steam from 2018 onward from Valve-produced transaction data.

[C] = [A] / [B].

Reply Attachment E-5

Prices Per Day From Commission Threshold Crossing

Days From Crossing Commission Threshold											
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
-360	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-359	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-358	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-357	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-356	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-355	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-354	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-353	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-352	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-351	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-350	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-349	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-348	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-347	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-346	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-345	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-344	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-343	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-342	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-341	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-340	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-339	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-338	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-337	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-336	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-335	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-334	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-333	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-332	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-331	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-330	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-329	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-328	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-327	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-326	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	

Days From Crossing Commission Threshold											
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
-325	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-324	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-323	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-322	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-321	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-320	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-319	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-318	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-317	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-316	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-315	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-314	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-313	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-312	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-311	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-310	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-309	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-308	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-307	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-306	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-305	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-304	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-303	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-302	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-301	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-300	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-299	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-298	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-297	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-296	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-295	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-294	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-293	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-292	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-291	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-290	\$ 59.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-289	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	

Days From Crossing Commission Threshold	[REDACTED]										
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
-251	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-250	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-249	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-248	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-247	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-246	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-245	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-244	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-243	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-242	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-241	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-240	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-239	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-238	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-237	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-236	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-235	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-234	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-233	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-232	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-231	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-230	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-229	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-228	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-227	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-226	\$ 39.99	\$ 49.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-225	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-224	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-223	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-222	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-221	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-220	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-219	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-218	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-217	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-216	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-215	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	

Days From Crossing Commission Threshold											
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
-214	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-213	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-212	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-211	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-210	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-209	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-208	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-207	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-206	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-205	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-204	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-203	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-202	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	
-201	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-200	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-199	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-198	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-197	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-196	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-195	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-194	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-193	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-192	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-191	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-190	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-189	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-188	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-187	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-186	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-185	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-184	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-183	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-182	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-181	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-180	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-179	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-178	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	

Days From Crossing Commission Threshold	[REDACTED]										
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	
-177	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-176	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-175	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-174	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-173	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-172	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-171	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-170	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-169	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-168	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-167	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-166	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-165	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-164	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-163	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-162	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-161	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-160	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-159	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-158	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-157	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-156	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-155	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-154	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-153	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-152	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-151	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-150	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-149	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-148	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-147	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-146	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-145	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-144	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-143	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-142	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-141	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	

Days From Crossing Commission Threshold	[REDACTED]										
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	
-140	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-139	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-138	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-137	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-136	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-135	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-134	\$ 39.99	\$ 34.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-133	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-132	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-131	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-130	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-129	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-128	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-127	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-126	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-125	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-124	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-123	\$ 39.99	\$ 34.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-122	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-121	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-120	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-119	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 59.99	\$ 29.99	
-118	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-117	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-116	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-115	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-114	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-113	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-112	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-111	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-110	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-109	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-108	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-107	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-106	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-105	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-104	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	

Days From Crossing Commission Threshold											
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	
-103	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-102	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-101	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-100	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-99	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-98	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-97	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-96	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-95	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-94	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-93	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-92	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-91	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-90	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-89	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-88	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-87	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-86	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-85	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-84	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 59.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-83	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-82	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-81	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-80	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-79	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-78	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-77	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-76	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-75	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-74	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-73	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-72	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-71	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 59.99	\$ 49.99	\$ 29.99	
-70	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-69	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-68	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-67	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	

Days From Crossing Commission Threshold																				
-66	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-65	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-64	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-63	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-62	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-61	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-60	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-59	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-58	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-57	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-56	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-55	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-54	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-53	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-52	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-51	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-50	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-49	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-48	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-47	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-46	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-45	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-44	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-43	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-42	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-41	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-40	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-39	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-38	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-37	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-36	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-35	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-34	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-33	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-32	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-31	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99
-30	\$	39.99	\$	34.99	\$	39.99	\$	49.99	\$	39.99	\$	39.99	\$	59.99	\$	49.99	\$	49.99	\$	29.99

Days From Crossing Commission Threshold											
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	
-29	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 39.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-28	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-27	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-26	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-25	\$ 39.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-24	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-23	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-22	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-21	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-20	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-19	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-18	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-17	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-16	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-15	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-14	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-13	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-12	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-11	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-10	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-9	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-8	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-7	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-6	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-5	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-4	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-3	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-2	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
-1	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
0	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
1	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
2	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
3	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
4	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
5	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
6	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	
7	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99	

Days From Crossing Commission Threshold										
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
8	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
9	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
10	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
11	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
12	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
13	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
14	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
15	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
16	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
17	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
18	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
19	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
20	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
21	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
22	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
23	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
24	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
25	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
26	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
27	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
28	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
29	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
30	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
31	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
32	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
33	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
34	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
35	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
36	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
37	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
38	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
39	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
40	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
41	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
42	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
43	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
44	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99

Days From Crossing Commission Threshold										
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
45	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
46	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
47	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
48	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
49	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
50	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
51	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
52	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
53	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
54	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 39.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
55	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
56	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
57	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 59.99	\$ 49.99	\$ 49.99	\$ 29.99
58	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
59	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
60	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
61	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
62	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
63	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
64	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
65	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
66	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
67	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
68	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
69	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
70	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
71	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
72	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
73	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
74	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
75	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
76	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
77	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
78	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
79	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
80	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99
81	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99

	[REDACTED]										
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	
82	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
83	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
84	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
85	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
86	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
87	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
88	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
89	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
90	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
91	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
92	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
93	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
94	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
95	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
96	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
97	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
98	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
99	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
100	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
101	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
102	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
103	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
104	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
105	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
106	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
107	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
108	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
109	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
110	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
111	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
112	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
113	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
114	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
115	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
116	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
117	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
118	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	

Days From Crossing Commission Threshold											
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
119	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
120	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
121	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
122	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
123	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
124	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
125	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
126	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
127	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
128	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
129	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
130	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
131	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
132	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
133	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
134	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
135	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
136	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
137	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
138	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
139	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
140	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
141	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
142	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
143	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
144	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
145	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
146	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
147	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
148	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
149	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
150	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
151	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
152	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
153	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
154	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
155	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	

Days From Crossing Commission Threshold	[REDACTED]										
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	
156	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
157	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
158	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
159	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
160	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
161	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
162	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
163	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
164	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
165	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
166	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
167	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
168	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
169	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
170	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
171	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
172	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
173	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
174	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
175	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
176	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
177	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
178	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
179	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
180	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
181	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
182	\$ 24.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
183	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
184	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
185	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
186	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
187	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
188	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
189	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
190	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
191	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
192	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	

Days From Crossing Commission Threshold	[REDACTED]										
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
193	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 29.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
194	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
195	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
196	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
197	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
198	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
199	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
200	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
201	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
202	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
203	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
204	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
205	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
206	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
207	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
208	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
209	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
210	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
211	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
212	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
213	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
214	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
215	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
216	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
217	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
218	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
219	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
220	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
221	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
222	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
223	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
224	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
225	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
226	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
227	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
228	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
229	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	

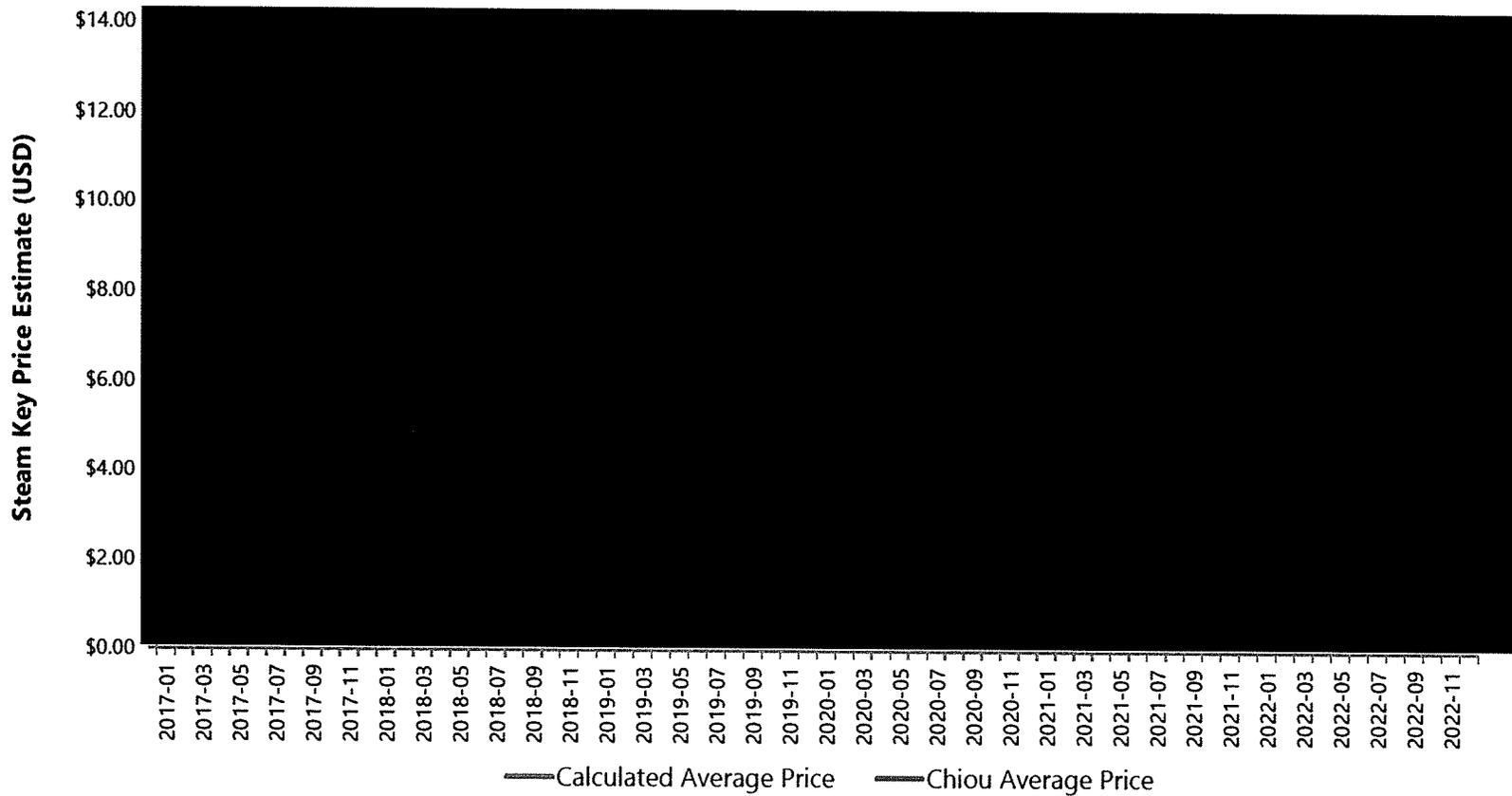
Days From Crossing Commission Threshold	[REDACTED]										
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
267	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
268	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
269	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
270	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
271	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
272	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
273	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
274	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
275	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
276	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
277	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
278	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
279	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
280	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
281	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
282	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
283	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
284	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
285	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
286	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
287	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
288	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
289	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
290	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
291	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
292	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
293	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
294	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
295	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
296	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
297	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
298	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
299	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
300	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
301	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
302	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
303	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	

Days From Crossing Commission Threshold	[REDACTED]										
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]	[I]	[J]	
341	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
342	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
343	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
344	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
345	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
346	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
347	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
348	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
349	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
350	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
351	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
352	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
353	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
354	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
355	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
356	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
357	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
358	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
359	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	
360	\$ 19.99	\$ 34.99	\$ 39.99	\$ 49.99	\$ 29.99	\$ 19.99	\$ 29.99	\$ 49.99	\$ 49.99	\$ 29.99	

Notes and sources:
 See: "07_360_Prices_Pull.R".
 Data from Valve-produced transaction data.
 [A]-[J] Prices corresponding with ApplIDs present in Section 8.4.1.

Reply Attachment F-1

Dr. Chiou's Overestimated Average Daily Prices



Notes and sources:

See: "05_Chiou_vs_Schwartz_price_comparison.R".

Data from Valve revenue dataset excluding [REDACTED] included in Chiou backup materials as MST_VALVE_REVENUE_NO_PARTNER.

Calculated Average Price = Gross Sales - Gross Returns - Net Tax, weighted by Units Sold - Units Returned.

Chiou Average Price = Steam key price calculated by Dr. Chiou in her rebuttal report and included in her produced backup materials