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STOP THE GAMES: HOW BROKER-DEALER GAMIFICATION AFFRONTS ANTITRUST

Tanner Dowdy

> He logs onto his TD Ameritrade or E*Trade or Schwab account, enters a ticker symbol of some stock, and clicks an icon that says "Buy": Then what? He may think he knows what happens after he presses the key on his computer keyboard, but, trust me, he does not. If he did, he'd think twice before he pressed it.[1]

I. INTRODUCTION

As the ball dropped in Times Square on New Year's Eve, GameStop (GME), the brick-and-mortar videogame retailer, welcomed 2021 at $18.84 per share.[2] Prospects for GME were poor.[3] Even before COVID-19, the company was forced to lay off hundreds of workers and close thousands of stores.[4] Unsurprisingly, hedge funds were shorting the company.[5]

As the New York Stock Exchange's closing bell chimed on January 27th, 2021, the $347.51 share price of GME echoed across Wall Street.[6] In just weeks, the price of GME had soared 1,600%.[7] As a result, hedge funds who shorted GME had to drain their pockets to close their positions.[8] The underlying sentiment driving GME's rebound has now become lore: retail investors, restless and idle from the pandemic-induced quarantine, colluded over Reddit and Tik-Tok to rapidly purchase GME shares, thereby driving the price of GME higher.[9]

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1. MICHAEL LEWIS, FLASH BOYS: A WALL STREET REVOLT 1 (2014).
2. *GameStop – Stock Price History*, MACROTRENDS, https://www.macrotrends.net/stocks/charts/GME/gamestop/stock-price-history [https://perma.cc/F5X9-3N3U].
3. *See, e.g.*, Adam Epstein, *The Video Game Industry Is Leaving GameStop Behind*, QUARTZ (Jan. 28, 2021), https://qz.com/1965538/why-did-hedge-funds-short-gamestop-in-the-first-place/ [https://perma.cc/SNC6-RCAP].
4. *Id.*
5. "Shorts are when investors bet that a stock will go down." Emily Stewart & Rani Molla, *Robinhood, and Its Role in the GameStop Saga, Explained*, VOX (Jan 30, 2021, 12:37 PM), https://www.vox.com/recode/22254270/robinhood-gamestop-amc-block-wallstreetbets-day-trading [https://perma.cc/BR5K-HEKR].
6. MACROTRENDS, *supra* note 2.
7. *Id.*
8. Sarah Cabral & Amy LaCombe, *Robinhood, Reddit, and GameStop: What Happened and What Should Happen Next?*, Markula Ctr. for Applied Ethics at Santa Clara Univ., https://www.scu.edu/ethics/focus-areas/business-ethics/resources/robinhood-reddit-and-gamestop-what-happened-and-what-should-happen-next/ [https://perma.cc/5CQC-8928].
9. *Id.*

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Together, the coordinated purchases triggered a short squeeze, saving GME from ruin and bringing the traders windfalls.[10] David had beat Goliath, ushering in the era of "meme stocks".[11]

But Goliath responded quickly. On January 28th, Robinhood—the brokerage app at the center of the saga—froze GME trading on its platform.[12] Robinhood justified its decision by citing liquidity issues.[13] But Main Street viewed the freeze as hypocritical, particularly given that Robinhood's motto is to "democratize finance for all."[14] Robinhood spent the remainder of the year in a firestorm of regulatory scrutiny.[15] When the smoke cleared, "gamification" of broker-dealers (BDs) such as Robinhood emerged a burning issue.[16]

"Gamification" is parlance for the "digital engagement practices" (DEPs) apps use to polish their platforms into exciting experiences.[17] Examples of gamification include: visual effects, vibrant colors, exciting noises, push notifications, social engagement opportunities, and free rewards.[18] None of these features are new to apps. Therefore, one may justifiably wonder what regulators are so worried about now that such features are reaching brokerage apps.

The worry is this: gamifying brokerage apps risks turning trading into a "flashy casino-like" experience that could trigger price volatility, capital misallocation, and consumer harm.[19] Thus far, regulators have targeted gamification through what this Comment terms

10. *Id.*; *see also* Melanie Cherdack, *Trading in the Time of Covid: A Robinhood Bromance*, 28 PIABA BAR J. 159 (2021). A "short squeeze" is a phenomenon in which the combination of stock buyers buying a stock and short sellers exiting their positions on the same stock coincides to produce a rapid appreciation in the price of the stock being traded. *See* U.S. SECS. & EXCH. COMM'N, STAFF REPORT ON EQUITY AND OPTIONS MARKET STRUCTURE CONDITIONS IN EARLY 2021 25 (2021).

11. *See, e.g.*, Elizabeth Gravier, *Meme Stocks: What Are They and Why You Should Be Careful Buying Them,* CNBC (Oct. 18, 2021), https://www.cnbc.com/select/what-is-a-meme-stock/ [https://perma.cc/R68N-MH8G].

12. Cabral & LaCombe, *supra* note 8.

13. *Id.*

14. *Id.*; *see also* Spencer Jakab, *Will the Real Robin Hood Please Stand Up?*, WALL ST. J. (Jan. 28, 2021), https://www.wsj.com/articles/will-the-real-robin-hood-please-stand-up-11611856775 [https://perma.cc/YP89-XX2L].

15. *See* Ephrat Livni, *Robinhood Faces Lingering Issues a Year After Meme-Stock Mania*, N.Y. TIMES (Jan. 27, 2022), https://www.nytimes.com/2022/01/27/business/robinhood-meme-stocks.html [https://perma.cc/74AP-UAW6].

16. James Fallows Tierney, *Investment Games*, 72 DUKE L.J. 353, 353 (2022).

17. *Id.* at 357.

18. *See* Jason Zweig, *When the Stock Market Is Too Much Fun*, WALL ST. J. (Dec. 11, 2020), https://www.wsj.com/articles/when-the-stock-market-is-too-much-fun-11607705516?mod=hp_lead_pos10 [https://perma.cc/HZ3P-9WYB]; *see also* Jennifer J. Schulp, *The Trading Game*, REGUL. REV. (May 3, 2021), https://www.theregreview.org/2021/05/03/schulp-trading-game [https://perma.cc/ZVD3-2GUB].

19. Kyle Langvardt & James Fallows Tierney, *On "Confetti Regulation": The Wrong Way to Regulate Gamified Investing*, 131 YALE L.J.F. 717, 718 (2022).

a *fiduciary approach*.[20]

This Comment joins a growing list of voices that are skeptical over the fiduciary approach to gamification. Accordingly, it proposes a new strategy: incorporating contemporary antitrust literature on zero-price firms and DEPs into the gamification debate. By the end, the antitrust risk that gamification poses in retail brokerage markets will be clear. To get there, this Comment proceeds as follows: Section II spans general anti-trust principles, the role of BDs, the danger of dopaminergic apps, and the efforts currently underway to stymie gamification; Section III details the antitrust risks that are implicated by BD gamification and offers several benefits that an antirust approach to gamification would provide over a fiduciary approach.

II. BACKGROUND

This Section gives a primer on four vital topics. Part A discusses general antitrust principles. Part B outlines the role BDs play in capital markets. Part C introduces the psychological dangers created by dark patterns (the subtly addicting design choices employed by digital apps). And finally, the actions taken thus far to stymie BD gamification are presented in Part D.

A. Antitrust Attacks More Than Monopolies & Price

The original antitrust movement culminated with the passage of the Sherman Act.[21] The Sherman Act uses broad language to attack both monopolization and attempted monopolization.[22] The Clayton Act, passed after the Sherman Act, clarified many issues the Sherman Act left vague,[23] particularly the issues of predatory pricing, price discrimination, and acts conducive to monopoly formation.[24] Later, the FTC Act established the Federal Trade Commission—a primary enforcer of antitrust law alongside the Department of Justice.[25] Though subsequent legislation has been passed, the Sherman Act, Clayton Act, and FTC Act

20. The use of "fiduciary approach" recognizes that in the United States, duties imposed upon broker dealers have long borrowed from "fiduciary-like standards." *See* Jerry W. Markham, *Regulating Broker-Dealer Investment Recommendations—Laying the Groundwork for the Next Financial Crisis*, 13 DREXEL L. REV. 377, 384-87 (2021).

21. *The Antitrust Laws*, FED. TRADE COMM'N, https://www.ftc.gov/advice-guidance/competition-guidance/guide-antitrust-laws/antitrust-laws [https://perma.cc/DS5V-985C].

22. *Id.*

23. *Id.*

24. *Id.*

25. *Id.*

remain the three core antitrust statutes.[26]

Agencies enforcing antitrust law are mandated to punish *all* anti-competitive activity, whether the firms punished are monopolies or not.[27] This mandate cuts a "wide path,"[28] the scope and nature of which remains debated today.[29] Nevertheless, much of the modern antitrust debate can be distilled into three questions: Should antitrust prioritize market efficiency or consumer protection? What non-price injuries can antitrust reach? And what should antitrust do about the explosion of zero-price digital markets?

1. A Shift to Consumer Protection

For years, market efficiency was exalted as the animating purpose for antitrust law.[30] This perspective can be traced to Robert Bork's influential article titled *Legislative Intent and the Policy of the Sherman Act*.[31] Bork believed that the antitrust framers rejected anti-competitive conduct not because it robs from consumer surplus, but because it hampers consumer welfare by producing *allocative inefficiency*.[32] This position was prominent among antitrust and law and economic circles in the latter half of the twentieth century.[33] In the words of Judge Richard Posner, "virtually everyone . . . agrees that the antitrust laws have a single objective—maximizing economic efficiency."[34]

Perhaps Judge Posner would be flummoxed to find not everyone agrees that efficiency is the best way to measure consumer welfare.[35] Indeed, an antitrust counter narrative has long preferred to prioritize policing non-price consumer harms and economic distribution over

26. *Id.*

27. *Id.*

28. John M. Newman, *Antitrust in Zero-Price Markets: Foundations*, 164 U. PA. L. REV. 149, 159 (2015).

29. *See, e.g.*, Andrew I. Gavil, *Competition and Cooperation on Sherman Island: An Antitrust Ethnography*, 44 DEPAUL L. REV. 1225 (1995); *see also* Thomas J. Horton, *Rediscovering Antitrust's Lost Values*, 16 U.N.H. L. REV. 179 (2018).

30. John B. Kirkwood & Robert H. Lande, *The Fundamental Goal of Antitrust: Protecting Consumers, Not Increasing Efficiency*, 84 NOTRE DAME L. REV. 191, 192 (2008).

31. *Id.* at 193.

32. *Id.* at 199-202 (emphasis added).

33. *Id.* at 194-95.

34. *Id.*

35. *Id.*; *see also* Johnathan B. Baker, *Competition Policy as a Political Bargain*, 73 ANTITRUST L.J. 483 (2006) (arguing that antitrust laws should be enforced to protect buyers without regard to aggregate surplus); Frank H. Easterbrook, Workable Antitrust Policy, 84 MICH. L. REV. 1696 (1986) (arguing that judges should use their authority to separate efficient from inefficient business practices, and that such an approach is at the core of consumer welfare protection).

harms to allocative efficiency.[36] The spirit of this counter narrative is prominent in the language of many federal court opinions.[37] For example, in the seminal *United States v. Microsoft*, the D.C. Circuit declared that "to be condemned as exclusionary, a monopolist's act must . . . harm the competitive process and thereby *harm consumers*."[38] And in *SCFC ILC, Inc. v. Visa USA, Inc.*, the Tenth Circuit was clear: "To be judged anticompetitive, the [conduct] *must actually or potentially harm consumers*."[39]

A comprehensive review of antitrust theory is beyond the scope of this Comment. But suffice it to say that a close reading of federal case law suggests that when disputed activity "presents a conflict between protecting consumers and promoting the efficiency of the economy," courts frequently side with consumers.[40] Accepting that antitrust law is broad enough to emphasize many types of consumer harm, an astute reader may then ask what consumer harms antitrust reaches.

2. A Shift Away From Price

Antitrust has long operated in "cash markets where customers spend fiat currency to buy goods or services."[41] Accordingly, when probing fact patterns for consumer harm, courts have historically responded to situations where consumers are faced with "higher prices, reduced output, or other money-related harms."[42] Price fixation has intuitive appeal: price is the fundamental signal of the economy's "central nervous system," and as such, is a primary determinant consumers use when deciding where to allocate their capital.[43]

There are many ways that firms can cause price injury; collusion to fix price is one way.[44] In a typical price fixing scheme, two firms collude to set prices, thereby restricting competition and consumer discretion in a market.[45] A dramatic example of price fixing was popularized by the film *The Informant*, which depicts the prosecution

36. *See, e.g.*, Kirkwood & Lande, *supra* note 30; *see also* Horton, *Rediscovering Antitrust's Lost Values,* 16 U.N.H. L. REV. 179 (2018) (emphasis added).

37. Kirkwood & Lande*, supra* note 30*,* at 217-224.

38. United States v. Microsoft Corp., 253 F.3d 34, 58 (D.C. Cir. 2001) (emphasis added).

39. SCFC ILC, Inc. v. Visa USA, Inc., 36 F.3d 958, 965 (10th Cir. 1994) (emphasis added) (citing Stamatakis Indus., Inc. v. King, 965 F.2d 469 (7th Cir. 1992)).

40. Kirkwood & Lande, *supra* note 30, at 191.

41. Tim Wu, *Blind Spot: The Attention Economy and the Law*, 82 ANTITRUST L.J. 771, 773 (2019).

42. *Id.*

43. United States v. Socony-Vacuum Oil Co., 310 U.S. 150, 224 n.59 (1940); *see also* Newman, *supra* note 28, at 149-50.

44. *The Antitrust Laws*, *supra* note 21.

45. *Id.*

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of the agribusiness giant Archer Daniels Midland Company (ADM).[46] In the case that inspired the film, *United States v. Archer Daniels Midland Co.*, ADM was charged with violating the Sherman Act after colluding with international competitors to fix the price of two animal feed additives—lysine and citric acid.[47] By forming a cartel, ADM and its co-conspirators were able to keep the price of the additives artificially high at the expense of their customers.[48] Price fixing is just one way prices can be manipulated to harm consumers. Today, times are changing: the ability to identify classical price harms has been obfuscated by the rapid ascendance of digital markets and zero-price firms.[49]

3. Zeroing in on Zero-Price Firms

Peruse a smart phone screen and the ubiquity of "zero-price" firms is glaring.[50] Today, free apps offering free products are flourishing.[51] Though zero-price products are not new, they have "exploded in number, variety and popularity" thanks to digital markets.[52] To remain profitable, zero-price firms often sell user data they collect to third parties.[53] Armed with user data, third parties are able to enter new markets, advertise products, and tailor growth strategies.[54] In such an arrangement, consumer information becomes "a form of currency, taking the place of money."[55]

Antitrust law has developed a "blind spot" towards zero-price firms and their capture of market share through selling data.[56] This blind spot emerged thanks to the longstanding fixation on price: the argument being that, because "customers do not pay anything" for zero-price products, "there can be no monopoly overcharges" and therefore "no need for antitrust scrutiny."[57] Critics ridicule this view for ignoring the

46. *See* Michelle Kung, *Soul of a Whistleblower*, WALL ST. J. (Sept. 11, 2009), https://www.wsj.com/articles/SB10001424052970203440104574401070297696260 [https://perma.cc/3K6E-76PE]; *see also* John M. Conley & William M. O'Barr, *Crime and Custom in Corporate Society: A Cultural Perspective on Corporate Misconduct*, LAW & CONTEMP. PROBS. 5, 11-16 (1997).

47. Conley & O'Barr, *supra* note 46, at 12-15.

48. Id.

49. Newman, *supra* note 28, at 151.

50. *Id.*

51. *Id.*

52. *Id.*

53. *Id*. at 166-67.

54. *Id.*

55. *Id.* at 167.

56. Wu, *supra* note 41, at 773.

57. Newman, *supra* note 28, at 160.

adage that there is no such thing as a free lunch; that is, zero-price firms compete for attention, not price, and although no currency changes hands, antitrust harms still arise from a firm's obsessive pursuit of consumer attention.[58]

Today, antitrust literature is warming to the idea that obsession over consumer attention leads to anticompetitive market conditions.[59] Anticompetitive market conditions will be further explored in Part D of this Comment; however, for now, it suffices to know that the rise of zero-price markets continues.[60] And the quintessential revenue model firms employ in a zero-price market—selling data to third parties for profit—has emerged in the digital retail BD market.[61]

B. The Role Broker-Dealers Play in Capital Markets

Successful economies have robust capital markets.[62] Robust capital markets permit firms and individuals to access funds for future growth.[63] There are multiple ways to secure funds in a capital market.[64] One option is to raise debt (i.e., sell bonds);[65] another option is to issue equity (i.e., sell stock).[66] To appreciate how robust the US stock market is, consider its total valuation of $50 trillion dollars.[67] Compared to a few decades ago, the size and speed of the equity market is dizzying and as the sophistication and speed of the US capital market increased, so did the sophistication and speed of those who facilitate it—BDs.

1. What Do Broker-Dealers Do?

In person or online, BDs are the middlemen that ensure trades get executed.[68] Broadly speaking, BDs interpose themselves between buyers

58. Wu, *supra* note 41, at 773.

59. *See* Gregory Day & Abbey Stemler, *Are Dark Patterns Anticompetitive?*, 72 ALA. L. REV. 1 (2020).

60. Newman, *supra* note 28, at 149.

61. Jason Aten, *Robinhood Is the Facebook of Investing*, INC (Jan. 28, 2021), https://www.inc.com/jason-aten/robinhood-is-facebook-of-investing-youre-data-not-customer.html [https://perma.cc/SH6E-SSL3].

62. *Understanding Capital Markets*, FED. RSRV. BANK ST. LOUIS, https://www.stlouisfed.org/education/tools-for-enhancing-the-stock-market-game-invest-it-forward/episode-1-understanding-capital-markets [https://perma.cc/N2WL-7ED9].

63. *Id.*

64. *Id.*

65. *Id.*

66. *Id.*

67. *Total Market Value of US Stock Market*, SIBLIS RSCH., https://siblisresearch.com/data/us-stock-market-value [https://perma.cc/3FKY-4F3L].

68. *See* Joshua Kennon, *What Is a Broker-Dealer?*, BALANCE (Aug. 25, 2022),

and sellers in a capital market to facilitate transactions.[69] They act as either agents (brokers) or principals (dealers).[70] When acting as a dealer, BDs place their own money on the line by purchasing securities, holding them in inventory, and selling them directly to buyers on exchanges at a fractional markup.[71] In an agent capacity, brokers marshal client orders to exchanges in search of a counterparty to settle with.[72] For their agent services, brokers used to demand commission.[73]

Circa 1960, this was a rather straightforward process:

> [A]n investor would dial his stockbroker on a rotary phone, place an order to purchase shares in IBM stock, the broker would call his trader on the floor of the NYSE [New York Stock Exchange], the trader would make a bid to the specialist for the shares, the buy order would be matched with an order to sell, the trade would be recorded with a pencil and a scrap of paper, the order would be filled, the stock certificate would be sent through the mail, and the investor would hold the shares for decades.[74]

Times have certainly changed.[75] Rotary phones have been replaced by fiber optic cables and lightning-speed digital tech.[76] Unsurprisingly, as technology evolved, broker business models did too.[77] As both markets and brokers evolved, so did the problems they faced.[78] Today, the controversial business model known as payment for order flow ("PFOF") is under scrutiny.[79]

2. Enter Payment for Order Flow

Under a PFOF model, brokerages are compensated for directing their orders to a third-party market maker, typically a High Frequency Trading Firm ("HFT").[80] Upon receiving the order, the third party assumes responsibility for executing the trade and, upon completion of the trade,

https://www.thebalance.com/what-is-a-broker-dealer-4067290 [https://perma.cc/MDA5-LUGW].

69. *Id.*

70. Markham, *supra* note 20, at 383-84.

71. *Id.*

72. *Id.*

73. *Id.*

74. Cherdack, supra note 10.

75. *See* Tom C.W. Lin, *The New Market Manipulation*, 66 EMORY L.J. 1253, 1255 (2017).

76. *Id.*; *see also* Stanislav Dolgopolov, *Wholesaling Best Execution: How Entangled Are Off-Exchange Market Makers?*, 11 VA. L. & BUS. REV. 149, 154-56 (2016).

77. Dolgopolov, *supra* note 76, at 154-56.

78. Lin, *supra* note 75, at 1255.

79. *See, e.g.*, Rachel Curry, *Payment for Order Flow (PFOF) Explained, and Why It Matters to Investors*, PUBLIC, https://public.com/learn/payment-for-order-flow-pfof-explained-and-why-it-matters [https://perma.cc/L3VG-MTRW].

80. *Id.*

the HFT remits a percentage of the bid-ask profit to the broker.[81] As market makers, third parties bear liquidity risk in the stocks they trade.[82] An example helps illustrate how PFOF works. Say a trader sells 125 shares of her Tesla stock on Robinhood for $1,000.00/share. Upon tapping the sell button, Robinhood collects her sell order and directs it to a third-party market maker—usually HFT Citadel Securities ("Citadel").[83] Upon receiving the Tesla sell order from Robinhood, Citadel momentarily fulfills the order by purchasing the stock being sold with its own capital.[84]

After fulfilling the order, Citadel marshals the sell order from Robinhood to an exchange in search of a counterparty.[85] Citadel, having momentarily fulfilled the sell order at $1,000.00, now asks for Tesla at a markup—say $1,000.50.[86] If a counterparty on the exchange happens to bid $1,000.50 for 125 shares of Tesla, then great! Citadel sells the shares to the buyer for $1,000.50, remitting half of the $0.50 profit on each share (the "bid-ask spread") back to Robinhood.[87] Upon execution, Robinhood receives a record of the trade and coordinates with a clearinghouse—such as the National Securities Clearinghouse Corporation—to ensure the original user's shares are liquidated from her account.[88] It may seem that halving $0.50 of profit per share is trivial, but performing millions of these transactions at lightning speed is lucrative business.[89]

Though PFOF has been a longstanding practice, its acceptance has been anything but.[90] Canada and the U.K. have banned the practice.[91] In October 2021, SEC Chair Gary Gensler tentatively expressed openness to banning the practice in the U.S.[92] The common criticism levied upon

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81. Cabral & LaCombe, *supra* note 8; *see also* Allen Ferrell, *A Proposal for Solving the "Payment for Order Flow" Problem*, 74 S. CAL. L. REV. 1027, 1028 (2001).

82. Ferrell, *supra* note 81, at 1028.

83. *See, e.g.*, Cabral & LaCombe, *supra* note 8.

84. *Id.*

85. *Id.*

86. *Id.*

87. *Id.*

88. *Id.*

89. Alexander Osipovich, *Payments to U.S. Brokers Surged Amid Meme-Stock and Options Boom*, WALL ST. J. (Feb. 1, 2022), https://www.wsj.com/articles/payments-to-u-s-brokers-surged-amid-meme-stock-and-options-boom-11643745771 [https://perma.cc/8ETU-ES4S].

90. John McCrank, *U.S. Online Brokers Still Profiting from 'Dumb Money'*, REUTERS (Oct. 8, 2019) https://www.reuters.com/article/us-usa-brokers-fees/u-s-online-brokers-still-profiting-from-dumb-money-idUSKBN1WN1UD [https://perma.cc/YV29-ZJAW].

91. *Id.*

92. Avi Salzman, *SEC Chairman Says Banning Payment for Order Flow Is 'On the Table'*, BARRON'S (Aug. 30, 2021), https://www.barrons.com/articles/sec-chairman-says-banning-payment-for-order-is-on-the-table-51630350595 [https://perma.cc/FGM9-369C]; *see also* J.W. Verret, *Robinhood's Threat to Sue SEC Over Broker Dealer Regulation Unlikely to Succeed*, HARV. L. SCH. F. ON CORP. GOVERNANCE (Dec. 23, 2021), https://corpgov.law.harvard.edu/2021/12/23/robinhoods-threat-to-sue-

PFOF is that it generates a conflict of interest for brokers.[93] That is, by selling their order flow, brokers are not incentivized to find the best execution for their orders (which they are legally required to do)[94] but rather the best remittance offered by third parties auctioning to execute the trade for them.[95] Proponents counter that PFOF lowers commission and enhances price discovery.[96] After Robinhood's trading freeze, this age-old debate was brought back to life.[97] The mixture of PFOF with widespread zero commission trading has added a new wrinkle to the debate.[98]

3. Enter Zero Commission Trading

Today, almost every major BD charges zero commission for trading.[99] Combining zero commission with an undeniably sleek experience, Robinhood differentiated itself from giants like TD Ameritrade, E*Trade, and Charles Schwab.[100] Robinhood's motto—to "democratize finance for all"—underscores the ethos of the zero-commission movement: barriers of entry once customary for retail investors should be removed.[101] Before zero commission, BD costs were "high, making active trading the domain of the wealthy."[102]

Yet there is an element of deception to zero commission trading. As SEC Chair Gary Gensler noted: "What makes the current zero-commission brokerage environment different is that investors do not see their costs as they're executing trades, so they may perceive them as free."[103] Again, there is no such thing as a free lunch: costs foregone in commission must be offset somewhere. So how are brokers doing it? It turns out, as some would put it, that they are "encouraging clients to trade

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sec-over-broker-dealer-regulation-unlikely-to-succeed/ [https://perma.cc/99Q4-K2QQ].

93. *See* Ferrell, *supra* note 81, at 1046.

94. *Id.* at 1066; *see also Best Execution*, FINRA, https://www.finra.org/rules-guidance/guidance/reports/2022-finras-examination-and-risk-monitoring-program/best-execution [https://perma.cc/XB8B-3RQ4] (last visited Feb. 11, 2023).

95. Curry, *supra* note 79.

96. *See* Joshua Rodriguez, *What is Payment for Order Flow (PFOF)?*, MONEY CRASHERS (Dec. 7, 2021), https://www.moneycrashers.com/payment-for-order-flow-pfof/ [https://perma.cc/X4XX-BMSV].

97. *See* Osipovich, *supra* note 89.

98. Id.

99. Id.

100. *See* McCrank, *supra* note 90.

101. Id.

102. Langvardt & Tierney, *supra* note 19, at 722.

103. Gary Gensler, Commissioner, Securities & Exchange Commission, Prepared Remarks at the Global Exchange and FinTech Conference (June 9, 2021), https://www.sec.gov/news/speech/gensler-global-exchange-fintech-2021-06-09 [https://perma.cc/P8LW-SYW8].

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prolifically to maximize third-party compensation to the broker."[104] TD Ameritrade and Robinhood regularly surpass $100 million in revenue per month using PFOF.[105] Having obfuscated the cost of trading through PFOF and zero commission, brokers are able to chase user attention *at any cost*.[106]

C. Chasing Attention: Dangerously Dopaminergic Design

At this point, it should be clear that competition for attention is the reason online brokers implement "[s]ocial networking tools; games, streaks, and . . . prizes; points, badges, and . . . celebrations for trading; . . . subscriptions and membership tiers."[107] Crucial to the success of this scheme is weaponizing the biology of dopamine.

1. Dopamine Feedback Loops in App Design

The neurotransmitter dopamine rewards "beneficial behaviors and motivates us to repeat them."[108] Like all neurotransmitters, dopamine must be regulated properly.[109] When dopamine circuitry goes haywire, it can lead to addiction.[110] Harmful addictions are dysfunctional feedback loops; the addictive activity feels beneficial to the body (thanks to dopamine), but in reality, the activity is dangerous to repeat due to the negative externalities that repetition of the activity produces.[111] Gambling addictions demonstrate an extreme example of how variable reward systems produce dopamine dysfunction.[112] Once a gambler is hooked to the casino's variable reward system (perhaps through a slot machine), the dopamine experienced overrides the cost of lost wealth.[113]

More benign is the rush of dopamine one feels after "successful social

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104. Langvardt & Tierney, *supra* note 19, at 718 (emphasis added).

105. Daytradingz, *Payment for Order Flow*, DAYTRADINGZ.COM, https://daytradingz.com/payment-for-order-flow/.

106. Langvardt & Tierney, *supra* note 19, at 723.

107. *Id.* (quoting Request for Information and Comments on Broker-Dealer and Investment Adviser Digital Engagement Practices, 86 Fed. Reg. 49067, 92766 (Sept. 1, 2021)).

108. Trevor Haynes, *Dopamine, Smartphones & You: A Battle for Your Time*, HARV. UNIV. GRADUATE SCH. ARTS & SCIS. BLOG (May 1, 2018), https://sitn.hms.harvard.edu/flash/2018/dopamine-smartphones-battle-time [https://perma.cc/4KBM-BWDB].

109. *Id.*

110. *Id.*

111. Rick Benson, *The Role of Dopamine in Gambling Withdrawal*, ALGAMUS GAMBLING TREATMENT (Apr. 25, 2018), https://www.algamus.org/blog/role-of-dopamine-in-gambling-withdrawal [https://perma.cc/KB9R-QMJM].

112. *Id.*

113. *Id.*

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interactions."[114] But like casinos, digital social media app designers have learned to exploit the benign link between socialization and dopamine to create something powerfully addictive: virtual social environments readily accessible "every waking moment of our lives."[115] Similar to the bells and whistles in a casino social media app like functions, comments, stories, direct messages, and personalized feeds all reward dopamine centers at variable schedules, and, as it is now well documented, produce negative externalities for consumers.[116] In antitrust literature, the designs used to capture attention and market share has been referred to as "dark patterns."[117] Only recently have the deleterious effects of "dark patterns" on the competitiveness of markets come to light.[118]

2. The Anticompetitive Effects of "Dark Patterns"

A growing wave of antitrust scholars are committed to exposing the danger of ubiquitous digital markets.[119] Recurrent in their literature is concern for users who become entrenched on digital platforms with no optionality for competition or superior services. The literature emphasized three harms that arise from user entrenchment in digital markets: (i) reduction in quality (ii) higher barriers to entry, and (iii) consumer wealth extraction.[120]

i. The Free Effect & Reduction in Quality

The lure of free goods is powerful.[121] So powerful in fact, that scholars have coined its influence on markets "the free effect."[122] To achieve the free effect, a free good or service is bundled with another good or service that is sold at a positive price.[123] Remarkably, when products are bundled in such a way, consumers value free products offered alongside another

114. Haynes, *supra* note 108.

115. Id.

116. Vikram R. Bhargava & Manuel Velasquez, *Ethics of the Attention Economy: The Problem of Social Media Addiction*, BUS. ETHICS Q. (July 2021), https://www.cambridge.org/core/services/aop-cambridge-core/content/view/1CC67609A12E9A912BB8A291FDFFE799/S1052150X20000329a.pdf [https://perma.cc/KS6T-UYCS].

117. Day & Stemler, *supra* note 59, at 2.

118. *Id.*

119. Michael S. Gal & Daniel L. Rubinfeld, *The Hidden Costs of Free Goods: Implications for Antitrust Enforcement*, 80 ANTITRUST L.J. 521, 527 (2016).

120. *See, e.g.*, *id.* at 534-40; *see also* Day & Stemler, *supra* note 59, at 14-38; John M. Newman, *Antitrust in Digital Markets*, 72 VAND. L. REV. 1497, 1511-20 (2019); Wu, *supra* note 41, at 772-74.

121. Gal & Rubinfeld, *supra* note 119, at 531-40.

122. *Id.* at 528.

123. *Id.*

more than if the free product were offered alone.[124] For example, in a classic experiment, consumers "valued a package with a free breakfast much above their valuation of a breakfast" standing alone.[125] The free effect allows the bundling firm to invest "less in the quality of the tying product to create a comparative advantage, thereby . . . reducing the need to *invest in quality*."[126] If widespread, a neglect on quality subsidized by entrapped consumers reduces competition.[127]

ii. Barriers to Entry

The free effect increases the expectation of free products more broadly.[128] Indeed, as consumers become more "accustomed to receiving goods for free, . . . they tend to expect to get other products of a *similar kind* . . . for free."[129] In digital markets, where seemingly every firm must compete for attention, the broad expectation of free goods can encourage practices that raise barriers to entry.[130] For example, in *United States v. Microsoft*, Microsoft's offer "of a forever free browser" in Internet Explorer was viewed as "a means of increasing the barrier to entry in the market for PC-based operating systems."[131] *Microsoft* is not the only example.[132] The reality is that, to some scholars, digital markets have amplified exclusionary effects "beyond what has been recognized."[133]

iii. Consumer Wealth Extraction & Sunk Costs

Entrapped with no viable alternative, consumers on zero-price platforms may pay supracompetitive costs in time and money.[134] One way this happens is through non-consensual exposure to content, particularly in advertising.[135] Non-consensual seizure of attention is on the rise.[136] An example is "Gas Station TV"—the small screens that play loud advertisements while you wait at the pump.[137]

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124. *Id.*
125. *Id.* at 534.
126. *Id.* (emphasis added).
127. *Id.*
128. *Id.* at 534.
129. *Id*. (emphasis added).
130. *Id.*
131. *Id.* at 524.
132. *See, e.g.*, Newman, *supra* note 28, at 1511-16.
133. Gal & Rubinfeld, *supra* note 119, at 534; *see also* Day & Stemler, *supra* note 59, at 34-39.
134. Wu, *supra* note 41, at 771-72.
135. *Id.* at 799-805.
136. *Id.*
137. *Id.* at 799.

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Consumer costs also rise when firms employ two-stage profit strategies.[138] In a two-stage profit strategy, a free good or service is provided, but, as users will be constantly reminded, a premium upgrade that carries additional benefits is offered as well.[139] If the consumer upgrades to the premium offer, the price paid is equivalent to a sunk cost that makes switching less attractive, thereby securing more attention for the zero-price firm.[140]

And, the more complex the product, the higher the sunk costs.[141] That is, if the free service adopted necessitates a learning curve (i.e., "learning to use new software"), the consumer's sunk costs trying to understand the product creates "lock-in effects" that reduce the likelihood a consumer will adopt an alternative—even if the alternative is superior.[142] The sum of these effects is often a rapid increase in market power for popular digital zero-price firms.[143] With the foundation of digital markets and brokers laid, it is now time to review how regulators currently approach gamification.

D. Regulatory Response

Before the passage of federal securities laws, BDs in the United States were controlled by common law, which was riddled with ambiguity over fiduciary duties.[144] Today, an amalgam of federal statutes cover brokers.[145] It is this amalgam of laws and agencies presently confronting zero commission, PFOF, and gamification.[146]

1. Regulation B.I. and The Fiduciary Approach

In 2011, an SEC staff study mandated by the Dodd Frank Act recommended the adoption of a bright line fiduciary rule for brokers.[147] Following years of bureaucratic brouhaha, the SEC finally adopted Regulation Best Interest ("Reg BI") in 2019.[148] Yet Reg BI does not

138. Gal & Rubinfeld, *supra* note 119, at 535-37.

139. *Id.*

140. *Id.*

141. *Id.*

142. *Id.* at 536.

143. *Id.* at 534.

144. Markham, *supra* note 20, at 383-84.

145. *See, e.g.*, EDWARD V. MURPHY, CONG. RCH. SERV., R43087, WHO REGULATES WHOM AND HOW? AN OVERVIEW OF U.S. FINANCIAL REGULATORY POLICY FOR BANKING AND SECURITIES MARKETS (2015), https://sgp.fas.org/crs/misc/R43087.pdf [https://perma.cc/7Q85-7GFZ].

146. Tierney, *supra* note 16, at 359.

147. Markham, *supra* note 20, at 414.

148. *See* Regulation Best Interest: The Broker-Dealer Standard of Conduct, 17 C.F.R. § 240.15l-80

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impose a fiduciary standard.[149] Rather, Reg BI stops one step short, gently ratcheting up the standard brokers must exercise when interfacing with *retail investor* clients.[150] The exact language provides that "when making a recommendation of any securities transaction," brokers must "act in the best interest of the *retail customer* at the time the recommendation is made."[151] This means that brokers cannot place their own "financial or other interest[s] . . . ahead of the interest of the retail customer."[152]

However, because Reg BI does not impose a rigid fiduciary standard, it has generated considerable confusion, stemming from the fact that "recommendation" was left undefined in the rule.[153] Difficulties aside, the rule remains in effect and investor advocates, understanding gamification as recommendations, support expanding its application to limit the power of DEPs.[154]

2. State Enforcement Actions

In the wake of the confusion over Reg BI, states began to adopt their own fiduciary standards.[155] For example, in 2020, Massachusetts adopted a rule that made it an "unethical practice to recommend an investment strategy . . . without grounds to believe that the recommendation is suitable for the customer."[156] Months later, William Galvin, Secretary of the Commonwealth of Massachusetts, brought an enforcement action against Robinhood, alleging that the firm's use of gamification and PFOF "violates state-law fiduciary duties owed to clients."[157] Robinhood countered with its own suit, asserting that the rule adopted by Galvin's office was unlawful.[158] Robinhood won and the Massachusetts Superior Court ordered that the fiduciary standard imposed conflicted with binding

(2019).

149. *Id.*

150. *Id.*

151. *Id*. at 1 (emphasis added).

152. *Id*.

153. Markham, supra note 20, at 414.

154. Miriam Rozen, *Reg BI Should Be Updated to Combat Gamification: SEC Investor Advocate*, ADVISORHUB (Oct. 13, 2021), https://www.advisorhub.com/reg-bi-should-be-updated-to-combat-gamification-sec-investor-advocate.

155. Andrew Welsch, *Massachusetts Took on Trading App Robinhood. The State Lost.*, BARRON'S (Mar. 31, 2022), https://www.barrons.com/advisor/articles/robinhood-fiduciary-rule-massachusetts-51648747784 [https://perma.cc/WP9F-L6CY].

156. *Id.*

157. Langvardt & Tierney, supra note 19, at 719; *see also* Thornton McEnery, *Robinhood Stock-Trading App Faces Regulatory Heat in Massachusetts*, N.Y. POST (Dec. 16, 2020), https://nypost.com/2020/12/16/robinhood-stock-app-faces-potential-lawsuit-in-massachusetts [https://perma.cc/N3LP-7YGQ].

158. Welsch, *supra* note 155.

common law precedents.[159] A 30-day stay on the order granted Galvin time to appeal.[160] At the time of this writing, litigation in Massachusetts is ongoing and state rulemaking continues.[161]

3. Congressional Inquiry

Congress has slowly joined the fray.[162] In 2021, Democratic Representatives Sean Casten and Bill Foster introduced the Trading Isn't a Game Act (HR 4685), which would require the Government Accountability Office to study the impact of gamification and "psychological nudges" on investors.[163] House Financial Services Chairwoman Maxine Waters committed to a hearing.[164] Despite antitrust legislation against the big tech ecosystem brewing, antitrust is notably absent from discussion on digital brokers.[165] Without the assurance of a legislative solution, some angry investors have chosen to carry on through private litigation to recover for harms they allege to have suffered under PFOF and gamification.[166]

4. Private Litigation

After the meme stock freeze, numerous Robinhood users sued the broker for "breaches of contract, breaches of the implied duty of good faith and fair dealing, negligence, and breaches of fiduciary duty."[167] In addition, customers brought antitrust suits, alleging that Robinhood had anticompetitively restricted trade by colluding with Citadel and other market makers to freeze trading.[168] Generally, these actions were unsuccessful.[169] However, without commenting on the merits of these

159. *Id.*

160. *Id.*

161. *Id.*

162. *See, e.g.*, Trading Isn't a Game Act, H.R. 4685, 117th Cong. (2021).

163. *Id.*

164. *Id.*

165. Lauren Feiner, *The Senate Will Get Its Best Shot at Regulating Big Tech, and Apple, Google and Amazon Are Already Playing Defense*, CNBC (Jan. 20, 2022), https://www.cnbc.com/2022/01/20/senate-to-mark-up-antitrust-bills-targeting-apple-google-and-amazon.html [https://perma.cc/F5MQ-8VXL].

166. ALEXANDER H. SOUTHWELL ET AL., THE GAMESTOP SHORT SQUEEZE – POTENTIAL REGULATORY AND LITIGATION FALL OUT AND CONSIDERATIONS 2 (Feb. 1, 2021), https://www.gibsondunn.com/wp-content/uploads/2021/02/the-gamestop-short-squeeze-potential-regulatory-and-litigation-fall-out-and-considerations.pdf [https://perma.cc/K5HZ-5CUN].

167. *Id.*

168. *Id.*

169. Alexander Osipovich, *Judge Dismisses Meme-Stock Lawsuit Against Robinhood and Citadel Securities*, WALL ST. J. (Nov. 18, 2021), https://www.wsj.com/articles/judge-dismisses-meme-stock-lawsuit-against-robinhood-and-citadel-securities-11637265778 [https://perma.cc/X5SY-QDYP]; *see also*

allegations, it is important to recognize that an antitrust suit attacking the manipulative nature of the gamification was left untried.[170]

III. DISCUSSION

Gamification needs a new perspective, one that is "technologically neutral" and "avoids asserting *direct control* over 'bad' software design."[171] This can be done through antitrust. Its application would concentrate not on the minutia of design, but on the business models that drive digital manipulation.[172] Understanding gamification as an antitrust risk would clear up a lot of confusion. The following Parts highlight why.

A. The Fiduciary Slippery Slope Problem

Applying fiduciary principles "risks devolving into a game of whack-a-mole" whereby BDs and regulators would be asked to determine whether traders—of which there are millions—*could be* manipulated by a DEP *ex ante* order placement.[173] Perhaps it is possible to draw those lines properly. But imagine how difficult the questions would be: which noises and colors are too much? When does a special effect become a nudge or recommendation? What about retail traders who profit handsomely from risky trades (like GME options)? Is that evidence of beneficial gamification? Should skepticism remain unconvincing, just recall the ambiguity already generated by Reg BI. If the SEC cannot offer a definition of a recommendation in Reg BI, how can it be expected to determine when DEPs amount to one? It is time to end these guessing games. Common sense dictates the need for an *ex-post* remedy that protects consumers in the digital BD market.

Antitrust is *ex-post*. In an antitrust case, a finding of liability would not require deep forays into the ways a specific effect constituted a recommendation. Nor would an antitrust case ask whether that effect was intended to be in the customer's best interest. Indeed, "as a general rule, intent plays a minor role in antitrust analysis."[174] What matters more is the "effect of the conduct."[175] Anticompetitive restraints would

Daniel Raddenbach, *Robinhood's Goal Is Not to Democratize Finance for All: Don't Expect GameStop Buyers' Lawsuits to Change That*, 105 MINN. L. REV. (Apr. 13, 2021), https://minnesotalawreview.org/2021/04/13/robinhoods-goal-is-not-to-democratize-finance-for-all-dont-expect-gamestop-buyers-lawsuits-to-change-that/ [https://perma.cc/7NRB-SUSP].

170. *See, e.g.*, Southwell et al., *supra* note 166.

171. Langvardt & Tierney, *supra* note 19, at 721.

172. Newman, *supra* note 120, at 1560.

173. Langvardt & Tierney, *supra* note 19, at 720.

174. Gal & Rubinfeld, *supra* note 119, at 548.

175. *Id.*

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need to be evidenced from a firm's conduct towards retail investors—conduct that gamification, if manipulative, could ostensibly play a part. A successful antitrust action would therefore quell gamification, but only indirectly, instead focusing on the business models that gamification amplifies.

The *ex-post* approach antitrust offers is more beneficial for all stakeholders. From a plaintiff's perspective, a clear record of anticompetitive restraints would need to be demonstrated before any challenge could succeed. Though this is a high barrier, the deployment of manipulative technology has been attacked under antitrust before.[176] From a regulator's perspective, enforcement would only be required once anticompetitive restraints on investors are demonstrated or detected in the market for retail investors. As recounted above, those restraints are beginning to gain broad recognition in antitrust literature on zero-price digital markets. Digital creatives contracting with brokers would rest easier too: *ex-post* rules would enable creative latitude for app developers, albeit with the caveat that admonishment is waiting should the downstream results of the technology implemented prove to be so manipulative that they are deemed anticompetitive. Finally, from a judicial perspective, evaluating a record for antitrust harm *ex-post* is far simpler than guessing whether certain DEPs effect the psychology of millions of customers *ex-ante*.

B. Applying Antitrust

To apply antitrust principles to gamification is to attempt what has not been done before. Accordingly, it is recognized that there will be gaps left in the following sections that need to be filled by future scholarship. Nevertheless, this Part highlights ways gamification could heighten antitrust risks latent in the digital BD market.

1. Defining the Market

Antitrust analysis must start with a market definition.[177] Without dovetailing into a protracted discussion on the proper market definition, this Comment defines the relevant market as the market for digital retail brokerage services, which is already recognized as distinct under Reg BI. This market—which would include players like Robinhood, TD Ameritrade, Fidelity, and Charles Schwab—has become increasingly concen-

176. *See infra* notes 119-138.

177. Felix B. Chang, *Second-Generation Monopolization: Parallel Exclusion in Derivatives Markets*, 2016 COLUM. BUS. L. REV. 657, 686 (2016).

trated by powerful zero-price firms.[178] Left unchecked, gamification on these platforms poses several antitrust risks in the digital BD market.

2. Spotting and Remedying Antitrust Risks

i. Parallel Exclusion

When two markets start to merge, and a handful of firms grow to dominate the intermediary function between both, the risk of parallel exclusion grows.[179] Parallel exclusion is "conduct, engaged in by multiple firms, that blocks or slows would-be market entrants."[180] Typically, the exclusion occurs as an emerging oligopoly of firms work independently to set rules and standards that centralize their power and exclude entrants in the converging markets.[181] A well-documented example of this was explored in over the counter ("OTC") derivatives markets where a handful of powerful banks have come to dominate the converging markets for dealing and clearing OTC derivatives. They achieved this by sitting on the boards of regulatory bodies that set standards for dealers trying to access clearinghouses.[182]

By manipulating, and entrenching, investors on their platforms upstream, gamification increases the risk that digital brokers concentrate downstream and develop the parallel exclusion problem apparent in OTC derivatives markets. It would happen like this: the more market share zero-price digital brokers accrue through attention capture and gamification, the more data flow they will send to a small number of closely connected HFT firms that clear their trades. If the BDs do not route to a market maker, they could just clear the trades themselves as principals. Cabined in FINRA and other self-regulatory agencies, zero-price BDs could advocate for entry standards and regulations that inhibit competition in the converging markets for ordering and executing retail trades on digital apps.[183] In this way, a cabal of powerful retail BDs—and their market maker counterparties—could corner the market for executing and clearing mobile retail trades.

178. Lyle Daly, *The Largest Brokerage Firms in 2022*, ASCENT, https://www.fool.com/the-ascent/research/largest-stock-brokerage-firms/ [https://perma.cc/WKC5-LNM4] (last updated Dec. 29, 2021).

179. *See, e.g.*, Chang, *supra* note 177, at 659-64.

180. C. Scott Hemphill & Tim Wu, *Parallel Exclusion*, 122 YALE L.J. 1182, 1185 (2013).

181. *See supra* note 183 and accompanying text.

182. Chang, *supra* note 177, at 673.

183. For instance, FINRA rulemaking is conducted through a ten-step process that includes commentary from interested parties. *See FINRA Rulemaking Process*, FINRA, https://www.finra.org/rules-guidance/rulemaking-process [https://perma.cc/3VKK-HN9B].

ii. Returning Supra-Competitive Costs

There is also the risk that gamification imposes supracompetitive costs on retail traders at execution. These concerns are not theoretical. Robinhood, for instance, has been fined for failing to ensure best execution for their traders.[184] The SEC has noted the systemic nature of this problem, declaring that commission-free trading "comes with a catch of potential breach of best execution."[185] Here, the antitrust harm would arise where DEPs are "meant to enhance addiction and manipulate usage," while at the same time "providing consumers with a qualitatively worse product."[186] That qualitatively worse product could be evidenced by poor price execution; after all, the product that BDs sell is cost efficient trade execution.

Admittedly, analyzing for supracompetitive costs would likely require closer scrutiny of individual DEPs than analyzing firm behavior for parallel exclusion. But technology that intentionally manipulates users and thereby imposes switching costs or supracompetitive costs has been targeted by antitrust before.[187] For example, in *Microsoft*, evidence proved that Internet Explorer, which was unable to be deinstalled, was "baked" in to "manipulate consumers" in the market for computer operating systems.[188] The court castigated Microsoft, holding that although "firms routinely innovate in the hope of appealing to consumers," Microsoft's actions pursued "unpleasant consequences" in violation of the Sherman Act.[189] The costs of competing against Microsoft in the operating systems market were raised while users were provided "a qualitatively worse product."[190]

Again, because retail investors are "uniquely vulnerable" to "sensation seeking, overconfidence, and limited attention," the incentive for brokers to seek and dark patterns for future manipulation is strong.[191] Concern about retailers facing supracompetitive costs is not mere paternalism. On average, retail traders perform far worse than the market when trading on their own, making "lots of time spent… on a brokerage app… an undesirable outcome."[192] In other words, lots of time spent on a brokerage

184. Jeff Berman, *SEC Fines Robinhood for Misleading Investors, Best Execution Failures*, THINK ADVISOR (Dec. 17, 2020), https://www.thinkadvisor.com/2020/12/17/sec-fines-robinhood-65m-for-misleading-investors-best-execution-failures [https://perma.cc/524T-7HCV].

185. Tierney, *supra* note 16, at 421.

186. Day & Stemler, *supra* note 59, at 35.

187. *Id.*

188. *Id.* at 37.

189. *Id.*

190. *Id.* at 35.

191. Langvardt & Tierney, *supra* note 19, at 724; Tierney, *supra* note 16, at 387.

192. Langvardt & Tierney, *supra* not 19, at 723.

app could impose supracompetitive costs on traders—in time, money, and attention. It is reasonable to assume that, as applied to retail traders, more trades, more attention capture, and more execution failure could all qualify as supracompetitive costs facilitated by DEPs.[193] Such costs would be avoided with the absence of manipulation through gamification.[194]

Though no antitrust case has been levied against a broker for manipulation yet, it makes sense to keep antitrust on the table: intentionally gaming investors to generate trades—trades that are then sold to market makers for profit—risks not only best execution violations, but the creation of anticompetitive conditions in the digital broker-dealer market. This is because the central service being provided—efficiently executing trades—may be suffering from a systematic reduction in quality to the trader, a reduction in quality that is pared with the losses traders have in time and attention.

Zooming out, subtly manipulating retail investors could reduce the macro-efficiency of capital markets. Advocates of the efficient market hypothesis uphold two ideals: (1) that prices reflect available public information and (2) that investors exercise free will to access public information.[195] Whether the efficient market hypothesis has merit is up for dispute.[196] Less controversial is the desire for investors to retain agency over their investments, which may be existentially threatened by manipulative technology that coerces behavior.[197] In *Tucker v. Apple*, the court noted the erosion in welfare that results when "a purchaser [is forced] to do something that he would not do in a competitive market."[198] This language aligns with the principle that "markets in which firms design interfaces to addict, subtly influence, or manipulate users" are "qualitatively inferior" to that those that work to "preserv[e] free will."[199]

Applied properly, antitrust could provide a powerful threat to firms who employ DEPs to hamper the free will of investors to delineate among competing retail brokers and the trades executed on their screens. Indeed, if the goal of antitrust is to protect investors from conduct that produces anticompetitive restraints, then antitrust should have an answer to automated technologies that target retail investors and impose supracompetitive costs in the form of their dollars, time, and attention. At

193. *Id.*

194. *Id.*

195. Burton G. Malkiel, *The Efficient Market Hypothesis and Its Critics*, 17 J. ECON. PERSPS. 59, 59-61 (2003).

196. *Id.*

197. *See, e.g.*, Day & Stemler, *supra* note 117, and accompanying text.

198. Tucker v. Apple Comput., Inc., 493 F. Supp. 2d 1090, 1097 (N.D. Cal. 2006) (quoting Murphy v. Bus. Cards Tomorrow, Inc., 854 F.2d 1202, 1204 (9th Cir. 1988)).

199. Day & Stemler, *supra* note 117, at 37.

the very least, the threat of antitrust may persuade brokers to exercise more diligence in monitoring the addictive power of their DEPs.

iii. Lowering Entry Barriers

Entry barriers could be especially pernicious in the digital retail broker market. To start, digital brokers regularly employ two-tiered profit strategies.[200] That is, once an app is downloaded, notifications offering premium deals and upgrades commence at once.[201] Because digital BDs recruit investors who have little to no experience in capital markets, BD apps may require steep learning curves. Linking bank accounts, learning where to invest money, learning about crypto, establishing a crypto wallet, perusing the app for financial news—all these behaviors function as sunk costs that entrench users, making investors less likely to be exposed to competitive alternatives.

Revisiting *Microsoft* is informative here. There, the bundling of Internet Explorer with Microsoft's operating system "created a two-level entry problem" for firms "that wished to compete in the operating system market."[202] That is, the free effect from the bundling forced entrants to the web browser market to offer "both a browser *and* an operating system" that would make the "purchase of the operating system economically viable."[203] Therefore, Internet Explorer was not really free: the "opp-ortunity cost of the free browser was the increased cost of entering the operating system market."[204] The lesson here is that when goods or services are free of charge, accounting for the effect of the complimentary product is vital in assessing market harm.[205]

Financial service firms experience high rates of customer retention as it is.[206] Making any financial service free (brokering included) only increases entrenchment, which then increases the risk that the anti-competitive restraints, as witnessed in *Microsoft,* appear in brokerage markets. In the context of a broker like Robinhood, it could be argued that the complimentary service traders receive with zero commission is supped up user interfacing, fractional shares, 24/7 trading, and other fun features spurred by gamification.

200. *How Do I Upgrade to Gold?*, ROBINHOOD, https://robinhood.com/us/en/support/articles/upgrading-to-gold [https://perma.cc/S9BZ-HCWB].

201. *Id.*

202. Gal & Rubinfeld, *supra* note 119, at 541.

203. *Id.* (emphasis added).

204. *Id.*

205. *Id.*

206. *See, e.g.*, Ron Shevlin, *Why People Don't Switch Banks Anymore*, FORBES (May 1, 2019), https://www.forbes.com/sites/ronshevlin/2019/05/01/why-are-fewer-consumers-switching-banks-because-checking-accounts-have-become-paycheck-motels [https://perma.cc/9PNV-LK4E].

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Therefore, entrants who wish to compete against Robinhood in the market for digital retail brokerage services—like those who wanted to compete with Microsoft's operating system—will need to build an equivalent user interfacing system to complement the free service. That user interfacing system—like the operating systems in *Microsoft*—would need to include fun features that make switching to the entrant worth it. That likely means more bells, more whistles, and stronger algorithms—more and more gamification. Antitrust is a blunt instrument to such entry barriers. Most dramatically, antitrust could dissolve an illegally acquired monopoly that has entrenched investors. Less dramatically, antitrust could be used as an injunction against the specific activity giving rise to the anticompetitive barrier—such as the bundling in *Microsoft*.

To be sure, the specter of antitrust might impair a broker's confidence to recruit and maintain clients for fear of inducing anticompetitive restraints. But the existential threat of legal action is nothing new for powerful BDs. And regardless, any ambiguity from the specter of antitrust would be a small price to pay for maintaining a healthier overall market, a market where retail investors, less inundated by DEPs, are more likely to be exposed to alternative brokers that secure best execution more consistently.

IV. CONCLUSION

The meme stock era has made gamification of BDs a hot topic in financial circles.[207] As more traders shift to digital apps, BDs will be incentivized to use any tactic possible to recruit traders.[208] Crucial to moving the gamification conversation forward is "situating" its risks "in theory and in doctrine" so that a cogent regulatory framework can be developed around them.[209]

This Comment fills this gap in the literature, positing that gamification, being the primary tactic used to curry users on retail broker apps, makes antitrust violations more likely in the retail broker market. Of critical importance is understanding the damage that would occur if no antitrust theory is developed. Without any antitrust perspective, regulators risk over-stepping by applying a fiduciary approach. A better approach is to have regulators monitor for anticompetitive restraints on traders and the digital BD market *ex-post*. Until anticompetitive restraints are evidenced, the entrance of more retail investors—even if in part due to gamification—should be celebrated, not denigrated. This is particularly true when many of the newcomers come from communities historically

207. *See supra* note 18.
208. *Id.*
209. Tierney, *supra* note 16, at 359.

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disenfranchised from capital markets.[210]

In addition to situating the gamification debate, this Comment offers several benefits that an *ex-post* approach provides. An immediate benefit is enhanced clarity for futuristic brokers who wish to interface with retail investors in new ways. Other benefits would include the protection of execution quality, an answer for parallel exclusion, and lower barriers to entry. Of course, how a future antitrust action is brought would depend on the facts and circumstances. But even if an antitrust action attacking DEPs is never brought, it is still worth setting the record straight on what the gamification debate should be about so that a misguided fiduciary approach is not imposed. It is time to end such games. Absent legislation that clearly defines how brokers should employ mobile DEPs, situating gamification as an emergent antitrust risk is the cleanest way to encourage innovation while simultaneously protecting retail investors from future exploitation.

210. Aaron Brown, *Robinhood Is Not Gamifying Markets. It's Democratizing Them.*, BLOOMBERG OP. (Dec. 17, 2020), [https://perma.cc/55HY-WJCH].