REGULATION FIX? RECOMMENDATIONS FOR THE SEC REGARDING DIGITAL ENGAGEMENT PRACTICES & PDA

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Abstract

The U.S. stock market has exploded with new retail investors entering the market. To attract these new investors, brokerage companies created brokerage smart phone applications, which has overall lowered the barriers to trading and lowered fees. However, with the rise in applications, came a new host of controversial tools to attract and keep investors engaged, such as the Digital Engagement Practices ("DEPs") and Predictive Data Analytics ("PDAs"). DEPs have been used in online marketing to "gamify" websites to attract customers and keep them engaged. When applied to investing, DEPs can encourage retail investors to trade beyond their risk tolerances or engage in risky trading behavior that they do not understand, such as option trading, leading to them losing thousands or hundreds of thousands of dollars. In addition, PDASS applied to investing through robo-advisors can lead to conflict-of-interest concerns, as the developers of the robo-advisors are working for the brokerage firm, not the retail investors. Therefore, these practices need to be regulated to ensure the harms these devices can cause to retail investors do not come to fruition. The SEC is seeking comment to determine if it should create new regulations on these practices. However, this paper shows the SEC can regulate these practices using its existing theoretical framework by informing brokerage firms that they fall under the existing security laws and by enforcing the laws strategically.

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I. *Introduction*

In January 2021, GameStop, a struggling game retailer, saw its stock price jump from $17 in early January to over $500, an almost 3,000 percent increase.[2] The reason? Meme stocks.[3] A meme stock is defined as "shares of a company that have gained viral popularity due to heightened social sentiment . . . through online and social media platforms."[4] Through communities on social media such as Reddit, share prices are elevated and overvalued relative to their fundamentals through a coordinated effort.[5] Many inexperienced investors performed well due to the meme stock craze, but many others lost hundreds or thousands trying to keep up with the hype.[6] Seasoned investors and brokerage firms thought the meme stock phenomenon would be short lived, but just recently in August of 2022, another meme stock blew up when Bed Bath & Beyond's share price jumped as much as 78.8%.[7] The SEC believes the meme stock

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[2] Raisa Burner, *They Went All-In on Meme Stocks One Year Ago. Here's What They Learned,* TIME (Feb. 22, 2022), https://time.com/6149431/meme-stock-investors-one-year-later/ ("In January 2021, a so-called short squeeze orchestrated primarily by Redditor hype men sent its stock price rocketing up; at its peak, GME was trading at over $500 a share, a wild upswing from its early January price at around $17.").

[3] *See id*.

[4] Adam Hayes, *Meme Stock*, INVESTOPEDIA (Feb. 22, 2022), https://www.investopedia.com/meme-stock-5206762.

[5] *See id*. ("Though some believe meme stock communities coordinate efforts to influence the prices of those shares, meme stock shareholders are often an unorganized set of independent individuals, each with their own investment views and preferences.").

[6] Saqib Iqbal Ahmed, *Meme stock hangover: a year after GameStop, traders face gloomier markets*, REUTERS (Jan. 28, 2022), https://www.reuters.com/business/finance/meme-stock-hangover-year-after-gamestop-traders-face-gloomier-markets-2022-01-28/ ("In many cases, those who arrived at the meme stock party early and were quick to take profits were rewarded, while late-comers were punished. Most of the stocks swept up in the 2021 trading frenzy now stand anywhere between 70% to 95% below their recent highs").

[7] Sophie Mellor, *Bed Bath & Beyond shares jump as much as 78.8% after legendary meme stock investor's latest bet*, FORTUNE.COM (Aug. 17, 2022), https://fortune.com/2022/08/17/bed-bath-beyond-share-price-jump-ryan-cohen-bet/ ("Shares in Bed Bath & Beyond surged more than 70% on Tuesday

craze has been exacerbated by brokers' and robo-advisors' use of practices that make trading more "fun," such as data analytics and Digital Engagement Practices ("DEPs").[8] The SEC is very concerned because of the makeup of these meme stock junkies.[9]

Since the pandemic began, a record amount of retail investors have entered the stock market for the first time.[10] A recent study by Charles Schwab revealed that fifteen percent of all investors in the U.S. market, or thirteen million people, entered the stock market in 2020, and the median age of the new entrants is more than a decade younger than those who began investing before then.[11] These investors also tend to have lower incomes and tend to be more racially and ethnically diverse than established investors.[12]

One of the reasons for this rise in investors is the proliferation of accessing stocks virtually anywhere through

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as retail investors on social media flocked to the stock after a filing revealed activist investor Ryan Cohen is holding steady on his bet.").

[8] Katanga Johnson, *Analysis: Will the games stop? SEC mulls crackdown on trading apps*, REUTERS (Jan. 26, 2022), https://www.reuters.com/business/finance/will-games-stop-sec-mulls-crackdown-trading-apps-2022-01-26/ (The SEC has found that many brokers, as well as roboadvisors, increasingly use analytics driven by artificial intelligence, video game-like features and other behavioral prompts to encourage stock trading or to sell certain products.").

[9] *Id.*

[10] Maggie Fitzgerald, *A Large Chunk of the Retail Investing Crowd Started During the Pandemic, Schwab Survey Shows*, CNBC (Apr. 8, 2021), https://www.cnbc.com/2021/04/08/a-large-chunk-of-the-retail-investing-crowd-got-their-start-during-the-pandemic-schwab-survey-shows.html ("Based on an analysis of about 500 investors, the brokerage found that 15% of current retail investors began playing the market in 2020. Schwab—which now hosts 31.5 million retail clients and $6.9 trillion in assets because of the retail investing boom—is calling the new wave of investors 'Generation Investor.'").

[11] *Id.*

[12] FINRA INVESTOR EDUCATION FOUNDATION & NORC, INVESTING 2020: NEW ACCOUNTS AND THE PEOPLE WHO OPENED THEM 2 (2021), https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them_1_0.pdf [hereinafter "FINRA/NORC Study"] ("New Investors during 2020 tended to be younger, earned lower incomes, and were more racially/ethnically diverse than Experienced Entrants and Holdover Account Owners.").

brokerage apps.[13] In 2021, over 16 million retail investors in the United States accessed their brokerage accounts through a mobile app according to Statista, or a 1,600% increase compared to 2017.[14] Brokerages facilitate financial transactions in the name of their clients.[15] Customers maintain accounts with the brokerage, and the funds in the accounts can be used to invest in an array of financial instruments, such as bonds, mutual funds, and stocks.[16] In the past, investing was inaccessible to many people.[17] To open a brokerage account, people needed at least some knowledge of the markets and the commission fees were frequently $8 to $10 per trade.[18] Everything changed with the emergence of the first digital brokerage app, Robinhood, offering clients a novel, lower-cost way to invest.[19]

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[13] Request for Information and Comments on Broker-Dealer and Investment Adviser Digital
Engagement Practices, Exchange Act Release Nos. 34-92766; IA-5833, File No. S7-10-21, at 3 (Aug. 27, 2021) ("With the advent and growth of digital platforms for investing, such as online brokerages and robo-advisers, and more recently, mobile investment apps and portals, broker-dealers and investment advisers (referred to collectively as 'firms') have multiplied the opportunities for retail investors to invest and trade in securities.").

[14] Austin Moss, How do Brokerages' Digital Engagement Practices Affect Retail Investor Information Processing and Trading 1 (Univ. of Iowa, Working Paper No. 2, Jan 20, 2022) ("A common narrative is that brokerages 'gamify' stock trading by adding digital engagement practices that increase uninformed retail trade.").

[15] *How Robinhood Makes Money*, CB INSIGHTS (July 8, 2021), https://www.cbinsights.com/research/report/how-robinhood-makes-money/ ("Customers maintain brokerage accounts with their brokers, through which investments are made by the brokerage. Funds held in brokerage accounts can be used to invest in a wide range of financial instruments, including bonds, exchange-traded funds (ETFs), mutual funds, and stocks.").

[16] *Id.*

[17] *Id.*

[18] *See id.* ("Until fairly recently, investing was out of reach for many people. Choosing a brokerage required at least some knowledge of the markets, and commission fees made investing a potentially costly endeavor, with trades frequently cost between $8 to $10.").

[19] *See id.* ("They usually charge lower commissions than full-service brokerages, but they don't conduct market analysis on behalf of their clients or offer investment advice. Because of this, discount brokerages are often synonymous with online brokerages.").

This rise in online brokerage apps has come with a new host of controversial tools to attract and keep investors engaged.[20] The most controversial of these tools are DEPs and Predictive Data Analytics ("PDAs").[21] DEPs are practices that encourage investors to partake in investing activities they might otherwise not have done, and PDAS use algorithms to determine what stocks to invest in.[22] Even though there are many benefits associated with these two practices, many commentators are worried these practices can pose a risk to both investors and the financial market in general.[23] Due to these increasing concerns, the SEC is considering whether to add new regulations specifically aimed at DEPs and PDAS.[24] In August

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[20] *See, e.g.*, Request for Information and Comments on Broker-Dealer and Investment Adviser Digital
Engagement Practices, *supra* note 12, at 4 ("Firms may use these tools to analyze the success of specific features and practices at influencing retail investor behavior (e.g., opening new accounts or obtaining additional services, making referrals, increasing engagement with the app, or increasing trading). Based on the results obtained from such AI/ML models and data analytics, firms may tailor the features with which different retail investor segments interact on the firms' digital platforms, or target advertisements to specific investors based on their known behavioral profiles.").

[21] *Id*. at 9–10 ("DEPs can potentially harm retail investors if they prompt them to engage in trading activities that may not be consistent with their investment goals or risk tolerance. Some have expressed concerns that DEPs encourage: (1) frequent trading; (2) using trading strategies that carry additional risk . . . and (3) trading in complex securities products. DEPs also may employ what some researchers have called 'dark patterns,' described as user interface design choices that are knowingly designed to 'confuse users, make it difficult for users to express their actual preferences, or manipulate users into taking certain actions.'").

[22] *Id.*

[23] *See e.g.,* Kyle Langvardt and James Fallows Tierney, *On "Confetti Regulation" The Wrong Way to Regulation Gamified Investing*, 131 Yale L. J. F. 717, 718 (2022) ("But by appealing to impulse rather than deliberation, the features promote patterns of risky trading that may not be in most retail investors' best interests").

[24] *See Press Release, supra* note 12, at 1 ("'While new technologies can bring us greater access and product choice, they also raise questions as to whether we as investors are appropriately protected when we trade and get financial advice,' said SEC Chair Gary Gensler. 'In many cases, these features may encourage investors to trade more often, invest in different products, or change their investment strategy. Predictive analytics and other DEPs often are designed with an optimization function to increase revenues,

of 2021, the SEC requested information and public comment on "matters related to the use of digital engagement practices by broker-dealers and investment advisors."[25] The SEC is concerned about the potential conflicts of interest where the platform itself could encourage risky or excessive trading without bothering about duties of loyalty and care for the investor.[26] Additionally, in 2022, the SEC committed to developing new regulations for Digital Engagement Practices and PDAs by placing them on its agency rule list, or its agenda.[27] However, introducing new regulations on these practices could stifle innovation and ultimately discourage firms from developing beneficial communications for existing and prospective customers.[28] Instead, the SEC should not introduce new regulations, but rather regulate these practices under the existing regulatory framework.

In this article, I will explain how the SEC can regulate these emerging practices under the existing regulatory framework and the benefits of doing so. In Part II, I will explain what DEPs are and their benefits and risks. In Part III, I will do the same for PDAS and Robo-advisors. In Part IV, I will discuss the current existing securities regulatory framework. In Part V, I will explain how other countries are handling these new tools and the perils of adding new regulations. Finally, in Part VI, I will explain how the practices can

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data collection, or customer time spent on the platform. This may lead to conflicts between the platform and investors. I'm interested in the varied questions included in the Request for Comment, and I'm particularly focused on how we protect investors engaging with technologies that use DEPs'").

[25] *Id.*

[26] *Id.* ("The Commission also is hoping to learn what conflicts of interest may arise from optimization practices and whether those optimization practices affect the determination of whether DEPs are making a recommendation or
providing investment advice.").

[27] *Agency Rule List – Fall 2022*, *Securities and Exchange Commission*, OFF. OF INFO. & REGULATORY AFFS. (2022), https://www.reginfo.gov/public/do/eAgendaMain?operation=OPERATION_GET_AGENCY_RULE_LIST&currentPub=true&agencyCode=&showStage=active&agencyCd=3235&csrf_token=ABBAA84824C29E01B566B0472A6E99E59C730916821A14613C79DE7F48AC8EAEF4CA3A7C929E9B10E667F119BAA4958D5293 [**https://perma.cc/ZR98-3N3L**].

[28] *See* Langvardt, *supra* note 22, at 720 (Discussing reasons why "securities regulators [should stay] away from confetti regulation, either through new rulemaking or through enforcement of existing law, ...").

be covered under the existing framework and give recommendations on how the SEC can better regulate these practices.

II. *Background on DEPs*

A. **What are DEPs?**

Today, in our increasingly digitally dependent world, businesses adopt practices that reward or encourage us to engage in activities we otherwise may be inadequate.[29] Businesses accomplish this with DEPs.[30] DEPs are defined by the SEC as "practices [that] include 'behavioral prompts, differential marketing, game-like features . . . and other design elements or features designed to engage with retail investors on digital platforms.'"[31] In essence, DEPs use digital channels to communicate and connect with current and potential customers to make a product more engaging and encourage customers to use the product more.[32] In the investment context, DEPs are often designed to encourage account opening, funding, and trading, or solely engagement with the app, as "there may be value in the number of investors interacting with the platform, how often they visit, and how long they stay."[33]

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[29] James Fallows Tierney, *Investment Games*, 72 DUKE L.J. 353, 393 (2022) ("[G]amification and app design can intervene in decisionmaking processes to encourage outcomes the person otherwise would not have chosen").
[30] *Id.* at 357 ("Other innovations have included intuitive and appealing design, as well as DEPs that encourage interaction with the app and that shape the information users consider in investing").
[31] *It's all fun and games: SEC requests information on digital engagement practices*, DAVIS POLK (Sept. 20, 2021), https://www.davispolk.com/insights/client-update/its-all-fun-and-games-sec-requests-information-digital-engagement-practices [https://perma.cc/X4E9-G625].
[32] Sarah Lentz, *What is Digital Engagement (& How to Increase It in 2023!)*, XPERIENCIFY (2023), https://xperiencify.com/digital-engagement/ [https://perma.cc/484P-RZEN] ("As the name suggests, digital customer engagement uses digital channels to communicate and connect with past, present, and potential customers").
[33] Request for Information and Comments on Broker-Dealer and Investment Adviser Digital Engagement Practices, *supra* note 12, at 8.

An example of a controversial DEP is gamification.[34] Gamification uses "elements of games for purposes other than their normal expected."[35] Brokers, such as Robinhood, use game features to encourage trading, such as having confetti rain down on the screen when a customer makes their first investment or giving a push notification when a stock does especially well to encourage customers to monitor their portfolio.[36] In addition, some brokers give free rewards, or free stock, for linking bank accounts or referring new users.[37] Other brokers encourage habitual engagement by giving preference to frequent users for new products or features.[38] All of these features make trading stocks seem like a game, which can lead to expensive consequences.

Gamification is extremely effective because of how the human brain works.[39] Completing tasks or achieving goals stimulate the brain and cause a release of dopamine, the hormone responsible for generating good feelings when humans complete specific actions, and endorphins, chemicals that reduce stress and anxiety.[40] When consumers receive a dose of dopamine or endorphins amplified by a

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34 *See Tierney, supra* note 28 ("Gamified investing can encourage trading that is excessive or maladaptive").

35 SEBASTIAN DETERDING ET AL., FROM GAME DESIGN ELEMENTS TO GAMEFULNESS: DEFINING GAMIFICATION (2011), https://www.researchgate.net/publication/230854710 [https://perma.cc/2PEA-9KDH].

36 *See* Tierney, *supra* note 28, at 357 ("Robinhood, for instance, used to shower digital confetti down a smartphone screen upon successful execution of a trade" and "Examples include leaderboards of volatile or popular stocks, push notifications prompting users to trade, and lottery-like rewards").

37 *Id*. at 368 ("Robinhood has offered users lotteries for surprise stocks as rewards for linking bank accounts or referring new users.").

38 *Id*. ("[R]eward frequent engagers with preferential access to new features.").

39 Mercy Ehrler, *What is Gamification And How Does It Work*?, ELEARNING INDUSTRY (June 27, 2022), https://elearningindustry.com/what-is-gamification-and-how-does-it-work (finding that gamification is effective because in human's mind, it creates a story around a topic and these stories help create on emotional connection with the content).

40 *Id*. ("Gamification is a powerful tool because of how the human brain works. It stimulates the brain, causing the release of dopamine (the hormone that generates good feelings when we complete specific actions) and endorphins (a natural chemical that reduces stress and anxiety).").

competitive element, they are compelled to return and engage with the content.[41] In addition, gamification gives people "clear markers of their progress to date and a map to guide them in their future actions", further compelling them to keep engaging in the activity.[42] Lastly, studies show that "just five minutes a day can be enough to embed new habits and behaviors into someone's daily activities."[43] Therefore, brokerage apps can influence investors into investing more even if investors do not spend much time on the apps.

Another unassuming but potentially harmful digital engagement practice is providing free financial education articles.[44] At first blush, articles giving general investment information, including investing definitions and concepts, seem like a great asset for retail investors. In fact, the Financial Industry Regulatory Authority agrees by excluding "general financial and investment information, including...basic investment concepts" from the definition of regulated recommended strategies under the FINRA Rule 2111.[45] However, many of these articles include text boxes or links to the brokerage apps, asking "Ready to start investing?"[46] Considering the structure and proximity of the textboxes to the articles, it can be assumed that the articles are used as a way to induce a person without experience and a false sense of confidence to

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[41] *Id*. ("Achieving goals, receiving badges or points, and moving up a leaderboard triggers the release of these chemicals, compelling participants to return to engage with the content.").

[42] Jacky Carter, *The Benefits of Gamification in Business,* HAYS (Nov. 11, 2019), https://social.hays.com/2019/11/05/benefits-of-gamification-in-business/ (finding that "gamification works because it provides [human] clear markers as to their progress to date, and a map to guide them in future actions . . . .").

[43] Ehrler, *supra* note 38.

[44] Travis C. Studdard, *Riling Up As Recommendation: How Commission-Free Brokerages Recommend Active Investing To The Public*, SEC (2022) https://www.sec.gov/comments/s7-10-21/s71021-9218141-250190.pdf (finding that Robinhood, for example, has hundreds of jargon-free articles from simple to complex financial topics).

[45] Melanie L. Fein, Securities Activities of Banks 2022-2 Supplement (4th ed. 2022).

[46] Studdard, *supra* note 43, at 14 ("However, a text box sits at the end of every article with a link asking 'Ready to start investing? Sign up for Robinhood and get your first stock on us.'").

begin trading.[47] Due to a psychological phenomenon, the Dunning-Kruger effect, people who gain some knowledge on a subject tend to overestimate their expertise in that area.[48] Therefore, after reading these short bite-sized articles, inexperienced retail investors may feel they are ready to buy stocks or trade options when they do not have the knowledge or expertise to make market returns, let alone above-market returns.[49]

A brokerage app that is notorious for this tactic is Robinhood.[50] On its company's "Learn" page, Robinhood has a link to a gaggle of articles called "Getting started with options."[51] The article readily states that options trading is not just for "adrenaline junkies" who enjoy "high-risk, short-term vices," and includes a link to the Robinhood app to try options trading.[52] These articles show how free articles that claim to be only educational can be utilized to encourage inexperienced investors to engage in risky trading behavior.

Other common DEPs include membership tiers that allow members to access special research reports or webcasts[53] Or, some brokerage apps provide a reduction of fees if the members reach a

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[47] *Id*. at 14 ("The lack of proximity between the article and the offer appears calculated to induce a person without experience to begin trading.").

[48] Jan Feld et al., Estimating the Relationship Between Skill and Overconfidence PAGE (Izainstitute of Labor Economics, Working Paper No. 10611, Mar. 26, 2017) (finding that The Dunning–Kruger effect states that low performers vastly overestimate their performance while high performers more accurately assess their performance).

[49] Studdard, *supra* note 43, at 16 ("Thanks to this psychological phenomenon, an inexperienced investor may feel he is ready to buy stocks and trade options after spending just a few minutes reading Robinhood's articles.").

[50] *Id*. ("The articles Robinhood and SoFi offer lack personalization which removes them from under the umbrella of recommendation.").

[51] *Getting started with options*, ROBINHOOD (2021) https://learn.robinhood.com/articles/getting-started-with-options/ (last visited Aug. 23, 2022).

[52] *Id*. ("Perhaps the biggest myth is that options are all just high-risk, short-term vices for adrenaline junkies.").

[53] Request for Information and Comments on Broker-Dealer and Investment Adviser Digital Engagement Practices, *supra* note 12, at 8 ("Some firms may offer subscriptions or tiered memberships. Examples of additional features that may be provided include access to research reports. . . ").

certain portfolio balance.[54] Some brokerage apps use points and rank individuals on leaderboards based on criteria developed by the firm to encourage members to trade more.[55]

B. **Benefits and Risks of DEPs**

Even though DEPs have been garnering a lot of negative attention, they can also be beneficial to businesses and consumers. For example, many commentators note that DEPs encourage retail investors to increase their contributions to retirement accounts and perform wealth-building activities.[56] In addition, brokerage apps have introduced "fee-free" or low fee trading.[57] Due to the lower fees and DEPs that make trading look fun, more low-income first-time investors have started to trade.[58] Therefore, DEPs encourage the

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[54] *Id*. (finding that some membership offers an exemption or reduction of fees).

[55] *Id*. ("Certain platforms also offer badges as visual markers of achievement as well as leaderboards to rank individuals based on performance-based criteria developed by the firm.").

[56] *See, e.g.*, Chris Carosa, *Are You Ready to Play the 401(k) Game? Hint: You Already Are*, FORBES (Apr. 14, 2021), https://www.forbes.com/sites/chriscarosa/2021/04/14/are-you-ready-to-play-the-401k-game-hint-you-already-are/?sh=5aba5d4a74ab; Greg Iacurci, *MassMutual Turns to Video Games to Boost Retirement Savings*, INV. NEWS (July 18, 2016), https://www.investmentnews.com/massmutual-turns-to-videogames-to-boost-retirement-savings-66476 (finding that the concept of gamification has been widely accepted by people in 401 K industry as a way to promote better savings habits).

[57] Alex Hern, *Are share-trading apps a safe way to play the markets?*, GUARDIAN (Feb. 7, 2021), https://www.theguardian.com/technology/2021/feb/07/are-share-trading-apps-a-safe-way-to-play-the-markets ("Apps, from Robinhood to Trading 212, have broken ground by offereing trades 'fee-free.'").

[58] *See* Austin Moss, *How do Brokerages' Digital Engagement Practices Affect Retail Investor Information Processing and Trading?* 1 (U. Iowa, Working Paper No. 2, 2022) ("An important contributor to these brokerages' success is their significant use of digital engagement practices, which the U.S. SEC (i.e., SEC) describes as '… design elements or features designed to engage with retail investors on digital platforms.'").

lower-income populace to attempt to build wealth and could help decrease income disparity.[59]

In addition, DEPs enhance access to customized products and services, allow for better customer service, increase investor education through the in-game features, and improve compliance efforts leading to fairer markets.[60] For example, according to FINRA, broker dealers are using digital tools "to analyze their customers' investing behaviors, website, and mobile app footprints, and past inquiries" to customize what content to display to them, such as curated educational information, news, or reports on specific products or asset classes.[61] Furthermore, brokerage apps are using AI and DEPs to improve customer service by providing links to educational articles or virtual assistants that can handle basic inquiries about accounts, and can connect the trader with the correct customer agent when needed.[62] These assistants are trained with a vast collection of historical data, customer account information and trading history, and market data to formulate responses to customer inquiries.[63]

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[59] *See* Ofer Eldar & Rory Van Loo, *Universal Ownership* 12 (Duke U. Working Paper No. 677, 2023) ("The idea is simply to allocate to stakeholders, particularly consumers and workers who belong to lower income groups, a greater share of public corporations.").

[60] *See* Sifma, Comment Letter on Broker-Dealer and Investment Advisor Digital Engagement Practices (Oct. 1, 2021) https://www.sifma.org/wp-content/uploads/2021/10/SIFMA-comment-re-DEPs-10.1.2021-FINAL.pdf ("In this regard, many DEPs may be viewed as the natural evolution of, and an improvement upon, long standing, conventional means of customer engagement, advertising, and education.").

[61] FINRA, AI APPLICATIONS IN THE SECURITIES INDUSTRY (2023) https://www.finra.org/rules-guidance/key-topics/fintech/report/artificial-intelligence-in-the-securities-industry/ai-apps-in-the-industry#:~:text=A%20number%20of%20broker%2Ddealers,provide%20customized%20content%20to%20them ("Some firms are using AI tools to analyze their customers' investing behaviors, website and mobile app footprints, and past inquiries, and in turn, to proactively provide customized content to them.").

[62] *Id*. ("Firms have noted that their virtual assistants provide responses to basic customer inquiries, such as those related to account balances, portfolio holdings, market data, address changes, and password resets.").

[63] *Id*. ("The applications are trained with large sets of historical and current data, including customer account information, trading history, and past inquiries, as well as market data, to formulate appropriate responses to incoming customer inquiries.").

As for benefits to businesses, DEPs increase revenue for brokerage apps by encouraging investors to trade more frequently.[64] Data collected by the Financial Industry Regulatory Authority shows that new investors with accounts opened in 2020 trade more frequently than other investors.[65] For example, while 56 percent of investors who access their accounts through a mobile app make one to three trades per month, 45 percent of investors who access their accounts from websites make no trades in a single month.[66]

On the other hand, the SEC and some commentators fear that DEPs can harm retail investors by encouraging investors to trade beyond their risk tolerance or use trading strategies that carry additional risk.[67] Specific securities and strategies, like options trading and margin accounts, are extended to investors – who do not understand the terminology– on the apps with just a few additional questions.[68] This has led to investors losing thousands of dollars or mistakenly believing they have lost money because they did not understand how the product worked.[69] A popular story arose in July

[64] *See* James Fallows Tierney, *Investment Games*, 72 DUKE L.J. 353, 365 (2022) ("In 2019, when most discount brokers began to offer zero-commission trading, market observers noted that gamification was driving growth.").
[65] *See* FINRA/NORC study, *supra* note 11, at 11 ("Those with accounts opened in 2020 (New Investors and Experienced Entrants) appear to trade more frequently than Holdover Account Owners.").
[66] *Id*. ("The majority of investors who accessed their accounts primarily through a mobile app (56 percent) reported making between one and three trades per month, while the plurality (45 percent) of investors who accessed their accounts primarily through a website reported making no trades per month.").
[67] *See e.g.*, Nathaniel Popper, *Robinhood Has Lured Young Traders, Sometimes With Devastating Results*, N.Y. TIMES (July 8, 2020), https://www.nytimes.com/2020/07/08/technology/robinhood-risky-trading.html ("But at least part of Robinhood's success appears to have been built on a Silicon Valley playbook of behavioral nudges and push notifications, which has drawn inexperienced investors into the riskiest trading, according to an analysis of industry data and legal filings, as well as interviews with nine current and former Robinhood employees and more than a dozen customers.").
[68] *Id*. ("Beginners are legally barred from trading options, but those who click that they have no investing experience are coached by the app on how to change the answer to "not much" experience.").
[69] *See e.g.*, Matt Egan, *Robinhood settles lawsuit over 20-year-old trader who died by suicide*, CNN BUSINESS (July 1, 2021),

of 2021 where a 20-year old trader committed suicide after seeing a negative account balance of $730,000 on his Robinhood app.[70] Yet, his account balance did not reflect all his holdings, as the put options he held would have covered the full balance "owed."[71] This has been a known issue with Robinhood's interface as other Robinhood options traders have reported seeing a negative cash balance that only exists until another portion of their trades is carried out, confusing them into thinking they have lost money.[72]

Moreover, online brokers can recommend stocks to create demand and manipulate the market.[73] For instance, some brokers give clients a list of stocks to choose from and highlight stocks that are "top movers" with the greatest change in percentiles, or most concentrated holdings among clients.[74] Accordingly, investors may be compelled to invest in these "top mover" stocks to chase

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https://www.cnn.com/2021/07/01/business/robinhood-lawsuit-suicide-settlement/index.html ("Kearns took his own life in June 2020 after mistakenly believing he owed $730,000 and his desperate attempts to get in touch with Robinhood went unanswered, according to his family.").

[70] *Id*. ("Kearns took his own life in June 2020 after mistakenly believing he owed $730,000 and his desperate attempts to get in touch with Robinhood went unanswered, according to his family.").

[71] Laura Temme, *Family of Young Man Who Thought He Owed Robinhood $170,000 Sues Over the App's Role in His Death*, FINDLAW (Feb. 25, 2021), https://www.findlaw.com/legalblogs/ninth-circuit/family-of-young-man-who-thought-he-owed-robinhood-170000-sues-over-the-apps-role-in-his-death/ ("But the other thing Kearns didn't know – and could not reach anyone at Robinhood to gain clarity on – is that he could sell the put options he still held. This could easily cover what he owed.").

[72] *Id*. ("Other Robinhood options traders have also reported seeing a negative cash balance that only exists until another portion of their trades is carried out.").

[73] *See* Tierney, *supra* note 28, at 366 ("The stocks on these lists might be selected by humans or instead be generated algorithmically, as Robinhood has disclosed. These lists can increase salience of certain stocks, like "top movers" with the greatest percentile changes that day, stocks with high trading volume across the broker's customer order flow or across the broader market, or most concentrated holdings among clients.").

[74] *Id*. ("These lists can increase salience of certain stocks, like "top movers" with the greatest percentile changes that day, stocks with high trading volume across the broker's customer order flow or across the broader market, or most concentrated holdings among clients.").

value—a phenomenon called "attention-induced trading."[75] However, according to a recent study, attention-induced trading leads to negative returns shortly after a rally, leading to many retail investors losing money attempting to follow what they believe will remain the highest trading stocks.[76]

In addition, even though trading on many of the apps is advertised as commission-free, many consumers that are being drawn to the app by the easy-to-use interface and DEPs are actually regularly paying more for the stock.[77] For example, Robinhood uses payment for order flow ("PFOF") to offer fee free trades.[78] PFOF is a "controversial practice in which brokers direct third parties known as 'market makers' to execute trades on their behalf.[79] The process works as follows: first, an investor places an order to buy or sell stock via the app, next Robinhood sends that order to the "market maker," such as Citadel, to actually execute the trade, receiving fees in return from the market maker.[80] The market maker profits on the transaction by buying the shares at slightly lower prices than at

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[75] *Id*. ("These lists can increase salience of certain stocks, like "top movers" with the greatest percentile changes that day, stocks with high trading volume across the broker's customer order flow or across the broader market, or most concentrated holdings among clients. Some securities may be more salient for reasons that are not apparent to an investor, or that may be unrelated to reasons why the investor wants to trade. This increased salience can induce demand, a phenomenon of attention-induced trading.").

[76] *See* Brad. M. Barber et al., *Attention Induced Trading and Returns: Evidence from Robinhood Users*, J. FIN. (Forthcoming), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3715077 ("Consistent with models of attention-induced trading, intense buying by Robinhood users forecast negative returns.").

[77] *See* Chuck Jaffe, *The hidden costs of using free-trading apps like Robinhood,* SEATTLE TIMES (July 27, 2019), https://www.seattletimes.com/business/the-hidden-costs-of-using-free-trading-apps-like-robinhood/ ("Robinhood, in a statement that came out late last year, quoted its payment-for-order flow revenues at 2.6 cents for every $100 traded, rather than quoting a the traditional price based on each share traded.").

[78] *How Robinhood Makes Money*, *supra* note 14 ("Although Robinhood was among the first zero-commission online brokerages, payment for order flow (PFOF) — the mechanism by which the company could offer fee-free trades, and its primary revenue center — was far from new.").

[79] *Id*.

[80] *Id*. (illustrating the process of a PFOF through the lens of Robinhood).

which they are sold due to the bulk order.[81] The issue with this process is that market makers are not legally required to provide the best price for the security, leading to market makers executing trades at prices that are profitable for them but may not be in the best interests of the trader.[82] Furthermore, Robinhood has not disclosed this practice, leading to the Federal Industry Regulatory Authority (FINRA) fining it for misleading customers.[83] Moreover, there are concerns that brokerage app companies are colluding with the market makers to limit market trading.[84] For instance, investors filed a class action lawsuit against Robinhood which claimed it colluded with Citadel; however, the district court dismissed the suit finding no agreement between the companies to act in concert.[85] Even though the suit was dismissed, according to the plaintiff's lawyer, internal executive chat logs of Robinhood show that Citadel executives had numerous communications with Robinhood's executives that indicate Citadel applied pressure to Robinhood to restrict trading of a stock, which resulted in losses for many retail investors.[86]

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[81] *Id*. ("Finally, the trade is executed by the market maker, which profits on the transaction by buying shares at slightly lower prices than the price at which those shares are sold.").

[82] *Id*. ("But while market makers are legally compelled to seek the best possible execution of trades for their clients, they are not compelled to provide the best possible *price*.").

[83] *Id*. ("The Financial Industry Regulatory Authority (FINRA) fined Robinhood $1.25M in December 2019 for 'best execution violations,' and in December 2020 the SEC charged the company with misleading its customers, which led to a $65M fine.").

[84] *See e.g.*, Katherine Doherty, *Robinhood, Citadel Win Dismissal of Meme-Stock Lawsuit*, LAW.COM (Nov. 19, 2021), https://www.law.com/dailybusinessreview/2021/11/19/robinhood-citadel-win-dismissal-of-meme-stock-lawsuit/ (discussing a lawsuit dismissed by a district court whereby the plaintiff alleged "that Citadel Securities amassed a substantial short position in GameStop Corp. and other stocks that exploded in value, and that the market-maker pressured Robinhood to stop customers from purchasing those shares, which the online brokerage did on Jan. 28.").

[85] *Id*. ("U.S. District Judge Cecilia Altonaga in Miami said that the plaintiffs failed to show there was any agreement between Citadel Securities and Robinhood to act in concert. In a Wednesday ruling, she dismissed the case without prejudice, giving the investor group until Dec. 20 to possibly file an amended complaint.").

[86] Liz Kiersche, *Citadel Securities rejects "Internet conspiracies" on Robinhood GameStop curbs*, SEEKING ALPHA (Sept. 29, 2021),

Additionally, DEPs may also employ what some researchers have called "dark patterns," described as user interface design choices that are knowingly designed to "confuse users, make it difficult for users to express their actual preferences, or manipulate users into taking certain actions."[87] Common examples of dark patterns include nagging, or the practice of a firm repeatedly requesting a user to do something it prefers, and obstruction, or a firm's attempt to delay a user from canceling a service by making the process to sign up or cancel a service asymmetrical.[88] Many apps allow you to sign up online, but require you to call or email to cancel the service.[89] Other examples include: sneaking, or obscuring costs; forced action, or tricking consumers into sharing personal info; scarcity, or giving a low stock message; and urgency, or informing a consumer an opportunity ends soon.[90] Studies show that these patterns convince consumers to "surrender cash or personal data in deals that do not reflect consumers' actual preferences and may not serve their interests."[91]

III. *Background on PDAs*

In addition to DEPs, the SEC is concerned about PDAS and artificial intelligence tools.[92] For instance, the SEC Chairman, Gary Gensler questioned, "[w]hen an adviser provides advice, in part through the use of PDAS, do those algorithms optimize for the

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https://seekingalpha.com/news/3745715-citadel-securities-rejects-internet-conspiracies-on-robinhood-gamestop-curbs (discussing the accusations of collusion between Citadel and Robinhood and the respective firms' responses).

[87] *See* Jaime Luguri & Lior Jacob Strahilevitz, *Shining a Light on Dark Patterns*, 13 J. LEGAL ANALYSIS 43, 44 (2021).

[88] *Id*. at 53 (summarizing the existing dark pattern taxonomies, including nagging, obstruction, and social proof).

[89] *Id*. at 53, 97 (discussing Sony's use of a roach motel, or asymmetry between signing up and canceling, to stop PlayStation users from avoiding renewing their subscription).

[90] *Id*. at 53 (summarizing briefly the existing dark pattern taxonomies).

[91] *Id*. at 81.

[92] Gary Gensler, Comm'r, Sec. Exch. Comm'n, Prepared Remarks Before the Investor Advisory Committee (March 2, 2023) (remarking on the potential conflicts of interest inherent to an adviser's use of PDAS).

investor's interests, and place the investor's interests in front of the adviser's own interests?"[93]

A. **What are PDAs?**

PDAs are "a branch of advanced analytics that makes predictions about future outcomes using historical data combined with statistical modeling, data mining techniques, and machine learning."[94] Analysts process a vast amount of data to identify correlations and trends.[95] In commercial settings, predictive analytics is used to determine consumer recommendations on streaming services, such as Netflix, or shopping platforms.[96] In trading, data analytics are used to provide insights on likely trends in stock performance, based on past performance and real-time movements in the financial markets.[97] While analytics in the past relied on fixed algorithms, today's data analytics rely on machine learning where the algorithms continue to learn based on ongoing data inputs to optimize results.[98] Currently, there are no regulations that govern the

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[93] *Id.*

[94] *What is predictive analytics?*, IBM, https://www.ibm.com/analytics/predictive-analytics#:~:text=Predictive%20analytics%20is%20a%20branch,to%20identify%20risks%20and%20opportunities.

[95] Yan Telles, *The promise of stock market data analytics*, ITECHART (last updated Feb. 27, 2023), https://www.itechart.com/blog/stock-market-data-analytics/#:~:text=How%20do%20data%20analytics%20work,%2C%20banking%2C%20and%20government%20organizations (recounting how data analytics work in the stock market and the modern reliance on machine learning).

[96] Rashida Richardson, *Addressing the Harmful Effects of Predictive Analytics Technologies*, GMF (Nov. 19, 2020), https://www.gmfus.org/news/addressing-harmful-effects-predictive-analytics-technologies#:~:text=Since%20predictive%20analytics%20necessarily%20relies,practices%2C%20policies%2C%20and%20conditions (describing the multitude of uses for predictive analytics in commercial setting and the public sector).

[97] Telles, *supra* note 94 (identifying the various uses of data analytics in the stock market, including real-time insights into the market, protecting existing portfolios, or identifying fraudulent behavior).

[98] *Id.* ("[T]he more qualified the data sources are, the better the outcome of machine learning's self-updates.").

design or use of PDAS in any sector.[99] The lack of constraints means that important factors—"such as what variables to include in prediction algorithms, the weight assigned to each variable, and standards for accuracy—are left to the discretion of engineers and data scientists and not subject to any form of public accountability."[100]

In addition, with the increase in machine learning and data analytics, robo-advisors, or online platforms providing investment advice driven by algorithms, have emerged.[101] In the past, financial advice was largely inaccessible to low- or middle-income investors due to the high cost.[102] Robo-advisors open the door to these investors to financial advice by being able to charge significantly less than traditional wealth management services.[103] With robo-advisors, clients fill out questionnaires with their personal information, financial goals, and risk tolerance, and an algorithm calculates an investment portfolio that is tailored to the client's needs.[104] However, robo-advisors don't just put investors into cookie cutter investments.[105] Instead, they rebalance portfolios automatically according to the investor's risk appetite, age, and financial or life goals.[106]

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[99] Richardson, *supra* note 95 ("Currently there are no laws or regulations to govern the design and use of predictive analytics technologies.").
[100] *Id*.
[101] Megan Ji, *Are Robots Good Fiduciaries? Regulating Robo-Advisors Under the Investment Advisors Act of 1940*, 117 COLUMBIA L. REV. 1543 (2017) ("In the financial services sector, the emergence of robo-advisors—online services that use algorithms to generate investment recommendations for clients.").
[102] *Id*. at 1544 ("In the past, the high cost of financial advice made such services inaccessible to all but the very wealthy").
[103] *Id*. ("By replacing human advisers with algorithms, robo-advisors are able to charge significantly less than traditional wealth management services, making them an appealing option for young investors and others with low account balances.").
[104] *Id*. at 1557 ("Clients fill out questionnaires with information such as age, household situation, income, savings, financial goals, and risk tolerance.").
[105] *See* Elizabeth Gravier, *A robo-advisor can invest on your behalf — here's how they work*, SELECT (Sept. 1, 2021) ("Beyond just mutual funds and ETFs, however, the robo-advisor uses your investment goals ultimately to help decide your asset allocation.").
[106] *Id*. ("[R]obo advisors automatically rebalance your portfolio from time to time based on your risk tolerance, market conditions and other factors.").

B. **Benefits and Risks of Data Analytics and Artificial Intelligence Tools**

PDAs have many benefits for both businesses and investors. For businesses, PDAs helps businesses attract and retain customers by predicting what a consumer will purchase and publicizing similar products.[107] In addition, it can help businesses provide better customer service and detect fraud, which is especially important with the growing concern of cybersecurity.[108] For both experienced and inexperienced traders, PDAs can help traders identify risks associated with their portfolio, monitor share prices, and identify financial assets.[109] Also, traders typically must understand the market to make a successful trade.[110] With robo-advisors, traders can more easily identify market trends and revise their trading strategies to maximize profits.[111]

In addition, as compared to traditional advising, robo-advisors minimize transaction costs.[112] For instance, human advisors typically charge between 1% to 2% of assets under management while robo-advisors charge on average between 0 to .5%.[113] Robo advisors can charge less due to several reasons. First,

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107 Neelam Tyagi, *Predictive Analytics: Techniques and Applications*, ANALYTICSTEPS (July 22, 2021), ("To determine purchasing response of customers and publicizing cross-sell opportunities, predictive models help in businesses to attract, retain and increase valuable customers.").

108 *Id*. ("With the growing concern of cybersecurity . . . analytics . . . examines all the suspicious behavior/activities across a network in a real-time to detect fraud actions.").

109 *5 Ways Data and Analytics Help Day Trading Investors Make Good Investment Decisions*, BIG DATA ANALYTICS NEWS (Feb. 15, 2021), https://bigdataanalyticsnews.com/data-analytics-help-day-trading-investors/ ("They are using technology to identify the direction of valuations, share prices, and identify financial assets.").

110 *Id*. ("to [be] a successful... trader, you must understand the market dynamics.").

111 *Id*. ("The bottom line is that data analysis helps you monitor the market trends and change your trading strategies to maximize profits.").

112 Ji, *supra* note 100, at 1559 ("[The] capability [of robo-advisors to automatically rebalance portfolios] minimizes transaction costs and helps ensure that investment allocations continuously reject client goals").

113 Eugene L.X. Wong, *Short Paper: Can Robo-Advisors Replace Traditional Advisors?,* DUKE, https://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/22393/Short_Paper__Can_Robo_Advisors_Replace_Traditional_Advisors_.pdf?sequence

robo-advisors can serve many more clients than their human counterpoints and therefore charge less due to economies of scale.[114] Second, robo-advisors typically use passive investment strategies versus active investment and therefore reduce labor costs.[115]

Moreover, robo-advisors can better ensure investment allocations continuously reflect a client's investment goals.[116] When a traditional investment advisor builds an investment portfolio for a new client, she determines the best asset mix to maximize returns while taking into consideration the client's risk tolerance.[117] However, over time, some asset classes may perform better than others, and the asset mix may differ than the original allocations.[118] Therefore, human advisors typically rebalance the portfolios at predetermined time intervals.[119] In contrast, robo-advisors have the ability to continuously monitor the portfolio and rebalance the portfolio automatically.[120] Robo-advisors thus ensure the portfolio is continuously aligned with the client's goals.[121]

Even though predictive data analytics and artificial intelligence tools can help investors, they also have a lot of risks. For instance, the algorithms behind artificial intelligence might not capture certain factors such as unusual market volatility like the meme stock trend resulting in unreliable predictions and ultimately

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=2&isAllowed=y ("[A] human advisor charges between 1% to 2% of assets under management . . . [c]omparatively, the robo advisor charges a range of zero to 50 basis points.").

[114] *Id.* at 1 ("As robo advisors are able to acquire and serve more clients, through the economics of scale, the fees would fall.").

[115] *Id.* ("Most robo advisors uses passive investment strategies, in view of reaping profits in a longer time horizon.").

[116] Ji, *supra* note 100, at 1559 ("Robo advisors have the advantage of being able to program continuous monitoring into their algorithms").

[117] *Id.* at 1558 ("When an investment adviser begins working with a client, she determines the investment mix that would maximize returns given the client's risk tolerance and allocates assets accordingly.").

[118] *Id.* ("But as different asset classes perform differently over time, the client's portfolio may "drift" from the predetermined allocations.").

[119] *Id.* (finding that human advisers primarily rebalance at predetermined time intervals).

[120] *Id.* at 1559 ("Robo-advisors have the advantage of being able to program continuous monitoring into their algorithms.").

[121] *Id.* at 1559 ("Robo-advisors have the advantage of being able to program continuous monitoring into their algorithms . . . . This capability minimizes transaction costs and helps ensure that investment allocations continuously reflect client goals.").

lower or negative returns.[122] For example, since algorithms rely on patterns and behaviors from the past to predict the future, many algorithms were largely ineffective when the Covid-19 pandemic hit.[123] In addition, in the years after the pandemic, the patterns captured during the Covid-19 crisis, such as higher spending on digital equipment, will become less relevant due to people returning to the office and will reduce the reliability of predictive algorithms that rely on Covid-19 era data.[124]

In addition, some commenters are concerned that "AI trading models across the industry may start to learn from each other, potentially leading to collusive activity, herd behavior, or unpredictable results."[125] Furthermore, predictive data analytics and artificial intelligence tools are used by companies to maximize profits, so these tools might introduce a conflict of interest where advisors are supposed to be performing in the customer's best interest and facilitate inequities in the market.[126] Chairman Gary Gensler, the head of the U.S. Securities and Exchange Commission, is also wary of intelligence tools due to the tools' ability to increase systemic risk and how certain artificial intelligence tools "might contribute to a future crises."[127]

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[122] FINRA, ARTIFICIAL INTELLIGENCE (AI) IN THE SECURITIES INDUSTRY (2020), https://www.finra.org/sites/default/files/2020-06/ai-report-061020.pdf ("Circumstances not captured in model training – such as unusual market volatility, natural disasters, pandemics, or geopolitical changes – may create a situation where the AI model no longer produces reliable predictions, and this could trigger undesired trading behavior resulting in negative consequences.").

[123] Roger Burkhardt et al., *Leadership's role in fixing the analytics models that COVID-19 broke*, QUANTUMBLACK (Sept. 1, 2020), https://www.mckinsey.com/business-functions/quantumblack/our-insights/leaderships-role-in-fixing-the-analytics-models-that-covid-19-broke ("While this quick-shifting environment affected the accuracy of models built before the crisis, it also led to the need for wholly new analytics capabilities to help leaders tackle these fast-emerging challenges.").

[124] *Id*. (discussing examples of how the Covid Pandemic reduced the accuracy and reliability of existing models based on historical trend data).

[125] FINRA, *supra* note 121.

[126] Dean Seal, *SEC Chair Wary of Conflicts, Bias In Predictive Data Tools*, LAW360 (Oct. 12, 2021), https://www.law360.com/articles/1430151/sec-chair-wary-of-conflicts-bias-in-predictive-data-tools (discussing SEC Chair's views on the dangers of conflicts of interest related to AI trading tools).

[127] *Id*.

Overall, digital engagement practices, data analytics, and artificial intelligence pose a risk to investors and the financial market as a whole. Therefore, regulators need a way to regulate them to limit risk as much as possible. The next section will cover the current laws and regulations that could cover these practices.

IV. *Current Regulatory Framework*

There are currently several federal regulations that regulate brokerage firms. This section will discuss several of the relevant regulations under the U.S. Securities and Exchange Commission and FINRA. FINRA, established in 2007, is a non-governmental agency that is authorized by the SEC to regulate U.S. stockbrokers and broker-dealer firms.[128] In order to operate as a brokerage firm in the United States, a firm must be registered with FINRA.[129]

A. Regulation Best Interest (RBI) Regulations

The Securities Exchange Act of 1934 established a Regulation Best Interest (RBI) standard of conduct for broker dealers when making recommendations to retail customers in regard to any securities transaction.[130] Under the SEC's RBI, broker dealers that make recommendations of securities transactions or investment strategies involving securities to retail customers must act in the best interests of such customers.[131] Therefore, broker or online investors may not place their interests ahead of their customer's interests.

[128] Roger Wohlner, *What is FINRA and what does it do?*, BANKRATE (Sept. 8, 2022), https://www.bankrate.com/investing/what-is-finra/ ("Financial Industry Regulatory Authority, or FINRA, is a self-regulatory organization authorized to regulate U.S. stockbrokers and broker-dealer firms. Brokers must be registered with FINRA in order to execute trades on behalf of their clients.").

[129] *Id*. ("Brokers must be registered with FINRA in order to execute trades on behalf of their clients.").

[130] *SEC Regulation Best Interest (Reg BI)*, FINRA, https://www.finra.org/rules-guidance/key-topics/regulation-best-interest ("The SEC's Regulation Best Interest (Reg BI) under the Securities Exchange Act of 1934 establishes a "best interest" standard of conduct for broker-dealers and associated persons when they make a recommendation to a retail customer of any securities transaction or investment strategy involving securities, including recommendations of types of accounts.").

[131] 17 CFR § 240.15l-1.

To satisfy the RBI standard, brokers must uphold four duties: disclosure, care, conflicts of interest, and compliance.[132] First, a broker must disclose all material facts relating to any conflicts of interest the broker has relating to the recommendation, all fees, the type, and scope of services the broker is providing, and any limitations the broker has on providing the recommendation.[133]

The second requirement to satisfy the RBI standards is to uphold a duty of care.[134] This duty requires the broker to understand the potential risk, rewards, and costs associated with the recommendation, have a reasonable basis to believe the recommended transactions are in the best interest of the customer, and that the recommendation is not excessive in light of the customer's profile.[135] Third, the broker must maintain written policies and procedures designed to identify and eliminate, or at minimum disclose, any conflicts of interest associated with the recommendations.[136] The broker must also eliminate any sales quotas or contests that are based on selling specific types of securities within a limited period of time.[137] Lastly, brokers have a compliance obligation to maintain and enforce written policies and procedures designed to achieve compliance with RBI.[138]

If a DEP is considered a recommendation, the regulatory framework requires that brokerage firms utilize DEPs in a way that prioritizes customer interests and meets RBI obligations of disclosure, care, conflicts of interest, and compliance.[139] Even if DEPs are not considered a recommendation, brokerages still must fairly deal with customers and use just and equitable practices.[140]

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[132] *Id*. at (a)(2).
[133] *Id*. at (a)(2)(i)(A), (a)(2)(i)(B).
[134] *Id*. at (a)(2)(ii).
[135] *Id*. at (a)(2)(ii)(A–C).
[136] *Id*. at (a)(2)(iii).
[137] *Id*. at (a)(2)(iii) (codifying the prohibition on broker sales quotas and contests).
[138] *Id*. at (a)(2)(iv) (codifying the requirement for brokers to create compliance and enforcement mechanisms to ensure RBI).
[139] *See id.* (requiring brokers to account for customers interests when using DEPs).
[140] *See* FINRA RULE 2010 (2008) (requiring FINRA members to "observe high standards of commercial honor and just and equitable practices of trade").

B. **Fiduciary Duties of Brokerage Firms & the Investment Advisor Act**

In addition, investment advisors are fiduciaries under federal law that owe their clients both a duty of care and a duty of loyalty.[141] This means that advisors must make full and fair disclosure of all material facts and eliminate or fully disclose conflicts of interest.[142] It also means that advisors have a duty to provide investment advice that is in the best interest of the client, a duty to seek best execution, and a duty to provide advice and monitoring at a frequency that is in the best interest of the client.[143] These obligations are enforceable to all brokerage advisors, including artificial intelligence ones, under the Investment Advisors Act of 1940.[144]

In addition, Section 206 of the Investment Advisors Act prohibits misstatements or misleading omissions of material facts and other fraudulent acts and practices in connection with the conduct of an investment advisory business.[145] Under Section 206(4)-1, investment advisors are also prohibited from advertising a graph, chart, or other device used to determine which securities to buy or sell unless the limitations of the device are also set out.[146] Investment advisors are also required to "eliminate or at least to expose . . . all conflicts of interest which might incline an investment advisor—consciously or unconsciously—to render advice which [is] not disinterested."[147]

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[141] *See* Commission Interpretation Regarding Standard of Conduct for Investment Advisers, 84 Fed. Reg. 33669 (July 12, 2019), https://www.govinfo.gov/content/pkg/FR-2019-07-12/pdf/2019-12208.pdf (stating that the Investment Advisor Act establishes a federal fiduciary duty to investment advisors).

[142] *Id.* (defining a investment advisors fiduciary duties).

[143] *Id*. (elaborating on the duties owed to clients by their investment advisers).

[144] Investment Adviser Act of 1940, 15 U.S.C. § 80b-2 (2018) (codifying the duties owed by investment advisers to their clients).

[145] Investment Advisor Marketing, 17 C.F.R. 275.206(4)-1 (2021) (prohibiting fraudulent or misleading marketing materials).

[146] *Id*. (explaining the specific prohibitions on advisor marketing pertaining to visual materials).

[147] Commission Interpretation Regarding Standard of Conduct for Investment Advisers, 84 Fed. Reg. 33669, 33670 (July 12, 2019) (quoting SEC v. Capital Gains Research Bureau, Inc., 375 U.S. 180, 194 (1963)).

The Investment Advisor Act was established as a way for the SEC to prevent investment advisor abuse.[148] The U.S. Supreme Court has used the provision in a variety of circumstances to prevent advisors from profiting unfairly from their clients.[149] For example, the U.S. Supreme Court has found the provision was violated when an advisor recommends the purchase of a security that the advisor purchased for its own account shortly before making the recommendation.[150] However, the Investment Advisor Act can be limited in scope and limits the SEC's enforcement power.[151] The SEC and courts have taken a piecemeal approach to filling the statute's gaps, through enforcement actions, no-action letters, and federal court cases.[152] Due to this approach, the standards required by the Investment Advisor Act are not always clear.[153]

Artificial intelligence tools, especially robo-advisors, would have to comply with these statutes even though the artificial intelligence tools are proffering the advice.

C. **Anti-Fraud Provisions**

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[148] SEC, REGULATION OF INVESTMENT ADVISORS BY THE U.S. SECURITIES AND EXCHANGE COMMISSION (2013), https://www.sec.gov/about/offices/oia/oia_investman/rplaze-042012.pdf (explaining the investment advisor regulation).

[149] Stephen L. Brodsky, *Ch. 6 Fiduciary Duty Claims Involving Investment Advisers and Other Financial Professionals*, Mazola Lindstrom LLP (Mar. 2022), https://www.mazzolalindstrom.com/wp-content/uploads/2022/03/Brodsky-ABA-Book-Chapter-re-Investment-Advisers-Clean-Copy-1.pdf (chronicling the history claims brought under the Investment Advisor Act in the Supreme Court).

[150] *Id*. at 98 (exemplifying opinions issued by the Supreme Court on enforcement of the Investment Advisor Act); *see also* Santa Fe Indus., Inc. v. Green, 430 U.S. 462, 472 (1977) (stating it is fraud or deceit for a registered investment advisor to fail to disclose to his clients his own financial interest in his recommendations).

[151] Joseph A. Franco, *Bending the Investment Advisers Act's Regulatory Arc*, 26 FORDHAM J. CORP. & FIN. L. 1 (2021) (explaining that the SEC is not omnipotent in the realm of enforcement against investment advisers).

[152] *Id*. at 102 (explain the ways in which the SEC has compensated for regulatory shortfalls found in the Investment Advisor Act).

[153] *See, e.g.*, *id*. at 75 (explaining that it is unclear whether the SEC intend for best interest to be used a standard or merely a guiding principle).

A primary objective of federal securities law is to provide the investing public with "comprehensive and accurate information about entities whose securities are publicly traded."[154] The SEC believes that a lack of consistent disclosure impairs investors' ability to make informed decision and detect fraud.[155] The anti-fraud provisions enable the SEC to regulate firms that engage in manipulative and deceptive conduct.[156] The SEC stated that "when a municipal issuer releases information to the public that is reasonably expected to reach investors and the trading markets, those disclosures are subject to the antifraud provisions because such statements are a principal source of significant, current information about the municipal issuer."[157]

The antifraud provisions include Section 10b of the Exchange Act and Rule 10b-5.[158] Under Rule 10b-5 of the Securities Exchange Act of 1934, it is "unlawful for any person, directly or indirectly…to make any untrue statement of a material fact or to omit to state a material fact … in connection with the purchase or sale of any security."[159] Therefore, the elements of 10b-5 include scienter (or a mental state embracing an intent to deceive), materiality, and information reasonably expected to reach investors.[160] A statement is material if "there is a substantial likelihood that the information would have been viewed by the reasonable investor as having significantly altered the total mix of information available."[161] This element depends on the facts and circumstances of each case.[162] As for the third element, a variety of statements that brokerage firms

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[154] *Application of Antifraud Provisions to Public Statements of Issuers and Obligated Persons of Municipal Securities in the Secondary Market: Staff Legal Bulletin No. 21 (OMS),* SEC (Feb. 7, 2020), https://www.sec.gov/municipal/application-antifraud-provisions-staff-legal-bulletin-21.

[155] *Id*. (explaining why the SEC believes disclosure is an important form of investor protection).

[156] *Id*. (assessing the necessity of anti-fraud regulation of investment advisors).

[157] *Id*.

[158] *Id*. (describing the antifraud provisions).

[159] 17 C.F.R. § 240.10b-5.

[160] Staff Legal Bulletin, *supra* note 153 (pointing out the elements of 10b-5).

[161] *Id*.

[162] *Id*. ("[Materiality] is determined based on the facts and circumstances in each instance . . . .").

make could qualify.[163] For instance, press releases, interviews with media representatives, and discussions with interest groups would all be statements that would reasonably reach investors.[164] The Commission also clearly stated that the laws apply to any information on an issuer's or brokerage's website, thus firms should ensure the information is accurate and not misleading.[165]

The Supreme Court has read Rule 10b-5 broadly deeming those who disseminate a misstatement, even if they are not responsible for the content of the misstatement, personally liable under the Rule.[166] Further, Rule 10b-5(a) prohibits the use of "any device, scheme, or artifice to defraud," related to the sale of securities.[167] If DEPs are considered statements, then firms could fall under this regulation.

D. FINRA's Regulatory Notice of Margin and Liquidity

FINRA imposes on broker dealers certain disclosure, approval, and due diligence obligations in order to permit a customer to trade options.[168] Under FINRA's disclosure obligations, brokerages must inform customers about the order handling procedures, explaining in detail the difference between different types of orders

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[163] *Id*. (pointing out the elements of 10b-5).
[164] *Id*. ("[Statements include] public announcements, press releases, interviews with media representatives, and discussions with groups whose members have a particular interest in their affairs").
[165] *Id*. ("Accordingly, the staff believes that municipal issuers should ensure that the information on their websites is accurate and not misleading.").
[166] Tobi Carter Richards, *Supreme Court provides new lens for evaluating Rule 10b-5 liability*, THOMSON REUTERS (May 7, 2019), https://tax.thomsonreuters.com/blog/supreme-court-provides-new-lens-for-evaluating-rule-10b-5-liability/ ("[T]he U.S. Supreme Court recently determined that even though a person who disseminates the material misstatement of another to potential investors with intent to defraud cannot be found primarily liable under Securities Exchange Act Rule 10b-5(b) on account of not being the author or "maker" of the statement, he or she can still be found primarily liable under Exchange Act Rule 10b-5(a) or (c)").
[167] *Id*.
[168] *FINRA Reminds Member Firms of Their Obligations Regarding Customer Order Handling, Margin Requirements and Effective Liquidity Management Practices During Extreme Market Conditions*, FINRA, https://www.finra.org/rules-guidance/notices/21-12 (reminding brokerage firms of their obligations to consumers).

and the benefits and risks of each, and if there will be any delays in the execution of trades due to market volatility.[169] FINRA's due diligence obligations require brokerages to provide "fair, consistent, and reasonable treatment of customer [options] orders at all times," even when the market is volatile.[170] Under Rule 5310, member firms are obligated to perform "reasonable diligence to ascertain the best market for a security and buy or sell in that market so that the resultant price to the customer is as favorable as possible under prevailing market conditions."[171]

FINRA also imposes "margin procedures" on brokerage firms to prevent a firm from extending credit to customers beyond than what the customers can reasonably repay.[172] For long term securities, firms must generally maintain a margin of twenty-five percent of the current market value.[173] For short term securities, firms must generally maintain a margin of thirty percent of the current market value.[174] In addition, FINRA requires firms to have "liquidity management practices to ensure the firm is able to continue to provide customers with access to the markets despite abnormal liquidity demands."[175] FINRA requires firms to comply with the SEC's Net Capital Rule and Customers Protection Rule regarding liquidity.[176] The Net Capital Rule states, "[e]very broker or dealer must at all times have and maintain net capital no less than . . . [1500 percent of its net capital for 12 months after commencing business as

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[169] *Id*. ("[I]t is important that customers are informed about member firms' order handling procedures, particularly during volatile market periods . . . .").

[170] *Id*. ("FINRA is reminding member firms that the duty of best execution requires the fair, consistent and reasonable treatment of customer orders at all times.").

[171] *Id*.

[172] *Id*. ("[M]argin procedures to prevent a firm from becoming overextended from lending in support of customer trades . . . .").

[173] *Id*. ("[A]ny long equity security in a Regulation T margin account, the maintenance margin requirement is generally 25 percent of the current market value . . . .").

[174] *Id*. ("[S]hort equity security, the maintenance margin requirement is generally 30 percent of the current market value.").

[175] *Id*.

[176] *Id*. ("[S]trict compliance with the SEC's Net Capital Rule . . . is an additional safeguard for firms, especially during challenging market conditions.").

a broker] and must otherwise not be 'insolvent.'"[177] The term "insolvent" under the Rule means that the broker is subject to any bankruptcy, has made a general assignment for the benefit of creditors, or is unable to reach the minimum of $100,000.[178] The Net Capital Rule was designed to protect customers from losses in the event that a brokerage firm goes bankrupt.[179] Since brokerage firms typically have contracts with each other, the rule also serves as a safeguard against systemic risk.[180]

V. *How the EU tackles investment protection and the Perils of New Regulation*

A. EU Rules and Regulations

One of the three main objectives of the European Union's International Organization of Securities Commissions (the EU's equivalent of the SEC) is to protect consumers.[181] For example, the Markets in Financial Instruments Directive 2014/65/EU ("MiFID2") issued by the Commission protects consumers from receiving poor

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[177] FINRA, NET CAPITAL REQUIREMENTS FOR BROKERS OR DEALERS, SEA Rule 15c3-1, https://www.finra.org/sites/default/files/SEA.Rule_.15c3-1.Interpretations.pdf

[178] *Id*. (defining the term on page 785).

[179] Norman S. Poser, *Why the SEC Failed: Regulators Against Regulation*, 3 BROOK. J. CORP. FIN. & COM. L. 289, 297 (2009) ("The SEC's net capital rule . . . is designed to protect the customers and creditors of a brokerage firm from losses and delays that can occur when a firm fails.").

[180] *Id.* ("Because broker-dealers typically have many outstanding contracts with each other, the rule also provides essential protection for other brokerage firms and the markets as a whole.").

[181] *About IOSCO*, OICU-IOSCO, https://www.iosco.org/about/?subsection=about_iosco [https://perma.cc/P9PU-DHYL] ("IOSCO members have resolved . . . to enhance investor protection . . . ."); (listing the three objectives of promoting adherence to internationally recognized and consistent standards of regulation, enhancing investor protection and promoting investor confidence in the integrity of securities markets, and exchanging information to develop markets).

advice.[182] If a failed investment was made on the basis of flawed advice, the investor is entitled to recourse from the advisor who provided the flawed advice.[183] Consequently, robo advisors and PDAs would be covered under this rule and would allow an investor to privately litigate against a brokerage firm if the robo advisor's advice or the app predictions were faulty.[184] Another article of MiFID2 that protects investors is Article 17, which requires the firms that engage in algorithmic trading *i.e.*, robo-advisors, to take additional measures, such as implementing controls to prevent erroneous orders and inform authorities of these controls.[185]

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[182] Philipp Maume, *Robo-advisors: How do they fit in the existing EU regulatory framework, in particular with regard to investor protection?*, at 23, ECON COMMITTEE, June 2021, https://www.europarl.europa.eu/RegData/etudes/STUD/2021/662928/IPOL_STU(2021)662928_EN.pdf ("If a failed investment is based on flawed advice, the investor must be given recourse against the advisor."); *see* Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU, 2014 O.J. (L173/349), at Art. 25, 4 ("Appropriate information shall be provided in good time to clients or potential clients with regard to the investment firm and its services, the financial instruments and proposed investment strategies, execution venues and all costs and related charges.").

[183] *Id.* ("If a failed investment is based on flawed advice, the investor must be given recourse against the advisor.").

[184] *See id.* ("Consequently, if robo-advisors fail to give proper advice, regulation needs to make sure that there are viable options for the client to seek redress, for example, through private litigation").

[185] *Id.* at 27 ("According to Art. 17(1) MiFID2, investment firms that engage in algorithmic trading must follow guidelines to prevent the sending of erroneous orders or the systems otherwise functioning in a way that may create or contribute to a disorderly market. The firm must have in place effective systems and risk controls suitable to the business it operates to ensure its trading systems are resilient, have sufficient capacity and are subject to appropriate trading thresholds and limits."); *see* Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 on markets in financial instruments and amending Directive 2002/92/EC and Directive 2011/61/EU, 2014 O.J. (L173/349), at Art. 17, 1 ("An investment firm that engages in algorithmic trading shall have in place effective systems and risk controls . . . to ensure that its trading systems are resilient and have sufficient capacity, are subject to appropriate trading thresholds and limits and prevent the sending of erroneous orders or the systems otherwise functioning in a way that may create or contribute to a disorderly market.").

The EU has also proposed rules that impact DEPs. Article 5 of the proposal prohibits the use of technology that deploys "subliminal techniques" or "exploits vulnerabilities of specific groups of persons."[186] In addition, if DEPs are considered advice, the regulations allow private litigation by consumers who were influenced by the DEPs into making failed investments.[187]

Despite these specific rules, in general, the EU's regulations cover brokerage firms' behavior instead of specific technologies.[188] An ECON committee study recommended not adding to or changing the current regulation, but clarified that the rules would remain "technology neutral."[189] In essence, the study recommends the EU inform brokerage firms that new technologies will be covered under the existing framework without any new amendments for new technology.[190] The study noted that this might cause legal uncertainty among brokerage firms in how the statutory rules would be applied as new technologies are introduced, but this approach will be more flexible because it will allow the EU to react to new market developments faster instead of amending the law every time a new technology is introduced.[191] The SEC should follow the EU's lead as

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[186] *Id.* at 19 ("The proposal contains general rules on the use of AI in practice. This includes in Art. 5 prohibitions of the use of AI that deploys subliminal techniques, exploits vulnerabilities of specific groups of persons, or uses real-time remote biometric identification systems in publicly available spaces for the purpose of law enforcement."); *See Proposal for a Regulation laying down harmonised rules on artificial intelligence*, EUROPEAN COMMISSION (Apr. 21, 2021) at Art. 5, 1 ("The following artificial intelligence practices shall be prohibited: (a) the placing on the market, putting into service or use of an AI system that deploys subliminal techniques . . . or use of an AI system that exploits any of the vulnerabilities of a specific group of persons . . . .").

[187] *See* Maume, *supra* note 181, at 23.

[188] *Id.* at 8 ("[MiFID2] follows the idea of technology neutral regulation, which means it applies to robo-advisors, although the concrete way of application in practice is sometimes unclear.").

[189] *Id.* at 23 ("In this study it is assumed that the EU will not abolish the idea of MiFID2 being technology neutral.").

[190] *Id.* ("This means that making substantial amendments to MiFID2 regarding robo-advisors would not be in line with the overall approach taken by EU financial markets regulation.").

[191] *Id.* ("[A] technology neutral approach can lead to legal uncertainty among market participants because it might be unclear how statutory rules are applied in the new, digital context. However, . . . [t]his approach would

new regulation targeted at new technologies can have adverse consequences, as the next section explains.

B. **Perils of New Regulation**

After discussing the risks to investors and the financial market, it might be tempting to just add new regulations to limit these practices. However, this may not be the best route to go. Two core missions of the SEC are to increase capital access and to protect consumers.[192] As stated above, DEPs and analytics have encouraged and helped first-time investors gain access to the capital markets. If the SEC were to completely limit these practices with new regulation, many agree that such regulation could stifle innovation and ultimately discourage firms from developing beneficial communications for existing and prospective customers.[193]

Furthermore, DEPs and PDAs in the financial sector have only started to become popular in the last few years. If the SEC regulates these practices too early, there is a risk that the regulation could preclude new technologies or become outdated.[194]

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also be more flexible because it would be possible to react to new market developments faster.").

[192] *Our Goals*, SEC, https://www.sec.gov/our-goals ("The SEC's long-standing three-part mission—to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation—remains its touchstone.").

[193] *See* Jasmin Sethi, *Is Gamification Bad for Investors?,* MORNINGSTAR (Nov. 17, 2021), https://www.morningstar.com/articles/1064778/is-gamification-bad-for-investors ("We encourage the SEC to carefully discern which nudges and conflicts are problematic, rather than making sweeping changes that could stifle engagement, innovation, and saving. Innovation by market participants has prompted significant engagement in markets, and digital engagement practices have played a key part in that progression.").

[194] *See Closing the gap: Getting from principles to practices for innovation friendly regulation*, GOV.UK (June 15, 2022) https://www.gov.uk/government/publications/closing-the-gap-getting-from-principles-to-practice-for-innovation-friendly-regulation/closing-the-gap-getting-from-principles-to-practices-for-innovation-friendly-regulation ("There are risks in regulating too early because it could unnecessarily preclude new technologies. There are risks in regulating too late, because investment could become stranded or public trust might have been lost, due to the risk of harm having already occurred. Regulation can also just become outdated.").

Moreover, many scholars have found that retail investors might be increasing their trading activity for reasons other than DEPs or data analytics.[195] For instance, scholars have identified that traders actively trade despite lacking skill due to risk preferences, aspiration for riches, or desire to consume entertainment.[196] Another reason younger and more diverse investors are joining the market is social media.[197] A study showed that more than thirty-five percent of new investors used social media to research investment ideas compared to only nine percent of new investors who researched investment ideas through brokers or financial advisors.[198] Therefore, DEPs and data analytics might not be as influential as some commenters believe and the new regulations would be overly paternalistic and negatively received by the public due to ineffectiveness. In addition, scholars note that securities regulation has not typically regulated retail investors' excessive trading or tendencies to gamble.[199] As long as the securities were fairly disclosed, the SEC has not passed any regulations prohibiting retail investors to trade excessively.[200] Since

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[195] James Tierney, Comment Letter on SEC Request for Information on Digital Engagement Practices (Gamification), File S7-10-21, at 2 (Oct. 1, 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3934893, ("Ordinary people are now trading more than ever before, for a variety of reasons—only some of which may be traceable to digital engagement practices.").

[196] *Id.* at 3 ("Scholars have identified a number of rational and imperfectly rational reasons why people actively trade despite lacking skill or superior information, such as their risk preferences, aspiration for riches, or desire to consume entertainment.").

[197] Michelle Fox, *Invest in You: Ready. Set. Grow. New investors are breaking the traditional mold when it comes to investing, CNBC survey finds*, CNBC (Aug. 23, 2021), https://www.cnbc.com/2021/08/23/-new-investors-break-traditional-mold-when-investing-says-cnbc-survey.html [https://perma.cc/2TRZ-RPV5] ("Social media also plays a big role for new investors.").

[198] *Id*. (showing more than a third of new investors said they used social media to research investment ideas in a CNBC survey).

[199] Tierney*, supra* note 194 ("Securities regulation has not typically been concerned with retail investors who engage in self-directed excessive trading.").

[200] *Cf.* Ryan Grandeau, *Securing the Best Odds: Why Congress Should Regulate Sports Gambling Based on Securities-Style Mandatory Disclosure*, 41 CARDOZO L. REV. 1229, 1257–58, http://cardozolawreview.com/securing-the-best-odds-why-congress-should-regulate-sports-gambling-based-on-securities-style-mandatory-disclosure/

securities law does not already have a set policy prohibiting excessive retail trading, regulators would be venturing out into uncharted waters in prohibiting or limiting retail investor speculation.[201]

Moreover, Robinhood has claimed new regulation would violate its constitutional rights.[202] The Chief Operating Officer ("COO") of the company claims that "[t]he First Amendment strictly limits the SEC's ability to regulate DEPs based on their communicative content."[203] The COO went on to say that DEPs "are designed to promote financial literacy and investment awareness and to provide customers with information they need and want in order to make informed and self-directed decisions about their future investment goals and needs."[204] He continues, "[j]ust as a painting or a symphony is entitled to no less First Amendment protection than a novel or a newspaper article, digital platforms do not lose First Amendment protection when they express ideas through 'animation and graphics' or 'visual cues.'"[205] Commentators believe Robinhood's claims could have some merit as the SEC would be prohibiting design features and certain code which could be considered banning a form of expression or speech.[206] Videogame or audiovisual content can count as speech even if the message is ambiguous or thin.[207]

(proposing a system like that of the Securities Acts which protects inexperienced investors merely through disclosure to protect sports gamblers).

201 *Id*. (mentioning that the SEC does not ban speculating for entertainment, but requires mandatory disclosures).

202 Benjamin Pimentel, *Robinhood to SEC: Gamification? It's free speech!*, PROTOCOL (Oct. 14, 2021), https://www.protocol.com/fintech/sec-robinhood-gamification-free-speech [https://perma.cc/8M3J-5RLW] ("Robinhood cited the First Amendment to defend the way [it] communicates and engages with its users . . . .").

203 *Id*.

204 *Id*.

205 *Id*.

206 Tierney, *supra* note 194 (explaining that banning "objectionable design features" might seem like a straight-forward and simple solution but would pose significant First Amendment risks).

207 Patrick M. Garry, *Video Games*, THE FIRST AMEND. ENCYCLOPEDIA (Sept. 2017), https://www.mtsu.edu/first-amendment/article/1152/video-games [https://perma.cc/3JFW-8T9K] ("The U.S. Supreme Court has explained that video games are a form of expression entitled to First Amendment protection."); *see also* Brown v. Ent. Merchs. Ass'n, 564 U.S. 786, 790–91

Therefore, digital stimuli that are part of the brokerage app's interface might fall within the First Amendment protection.[208] However, according to past case law regarding free speech, these claims are unlikely to prevail because the SEC has avoided serious First Amendment scrutiny or judicial interference for decades.[209] Yet, the SEC should take First Amendment implications into consideration when deciding whether to implement new regulations to prevent risks of constitutional challenges.

Furthermore, a typical response by the SEC is to implement mandatory disclosures.[210] Mandatory disclosures specifically designed for DEPs and PDAs seems like a good idea; however, it will likely not be very effective. First, securities law already requires disclosure for the underlying business practices.[211] Second, since consumers are likely to just press a box accepting disclosures when opening an app, it is likely consumers will not glean any material information from them.[212]

VI. *Application and Recommendation*

The Commission has long focused on protecting the investing public.[213] The existing securities regulatory framework, bolstered by FINRA regulations, provides significant protection for investors, much of which already applies to firms' use of DEPs and PDAS.[214] The following parts will show how the existing regulations

(2011) (concluding that video games are a medium of expression deserving of free-speech protection).

208 *See id.*

209 Frederick Shauer, *The Boundaries of the First Amendment: A Preliminary Explanation of Constitutional Salience*, 117 HARV. L. REV. 1765, 1780 (2004) ("Although the Supreme Court and the lower courts occasionally brandished the First Amendment when securities regulation appeared to trench upon the editorial content of newspapers and newsletters, or upon the behavior of journalists, a frontal First Amendment assault on the securities regulation system never got off the ground.").

210 Tierney, *supra* note 194 ("[M]andatory disclosure is a favored and common response in securities law . . . ").

211 *Id*. ("[T]here are already disclosures about the underlying business practices . . . .").

212 *Id*. ("[I]t is unclear that any retail clients will consume disclosures about digital engagement practices.").

213 *See supra* Section II.

214 *Id.*

can apply to these practices and how the SEC can bolster its existing policies to better protect both inexperienced and experienced investors.

A. RBI Regulations

To recap, RBI regulations require brokers to uphold four duties: disclosure, care, conflicts of interest, and compliance whenever they make a recommendation to an investor.[215] Based on past actions, DEPs and PDAS could be considered recommendations.[216] For instance, with the approval of the SEC, FINRA's predecessor issued a notice about what online communications would be considered a recommendation.[217] The notice included "customer specific . . . pop-up screen[s]" and lists that favor securities in which the brokerage makes a market.[218]

As recommendations, the use of DEPs and PDAs can create conflicts of interest or duty of care issues.[219] For example,

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[215] *See supra* Section II(A).

[216] Tierney, *supra* note 28, at 431 (*quoting* Regulation Best Interest: The Broker-Dealer Standard of Conduct, 84 Fed. Reg. 33,318, 33,335 (July 12, 2019) (codified at 17 C.F.R. pt. 240) (noting "line-drawing problems about gamification features" that draw attention to particular items.); *id.* (explaining that the SEC uses a facts-and-circumstances test to determine whether a communication is a recommendation, based on "'whether the communication "reasonably could be viewed as a 'call to action'" and "reasonably would influence and investor to trade a particular security or group of securities.'").

[217] *Id*. at 432 (noting that "[r]egulators have articulated decades' worth of rules and guidance about when brokers' presentation of information—including in online communications with customers—might be a recommendation."); i*d*. (noting that "many digital engagement practices" have been considered recommendations since FINRA's notice).

[218] FINRA, Notice to Members 01-23 on Suitability Rule and Online Communications, (March 18, 2001), https://www.finra.org/rules-guidance/notices/01-23 (providing "some examples of electronic communications that could be viewed as within or outside the definition of 'recommendation'").

[219] *See id*. at 417, 432 (citation omitted) (explaining that "gamification practices can capture retail investors' attention and thereby induce trading in stocks for reasons . . . unrelated to the 'value' the investment offers," but that broker-dealers have a duty of care to have a reasonable basis for believing recommendations are in the customer's best interest, not just when

broker-dealers may place stocks that they will personally benefit from an increase in price on a leaderboard to influence more investors to invest.[220] Or a brokerage app might write articles about investing topics and encourage potential investors to try out their new knowledge.[221]

DEPs are not the only area where conflicts of interest can persist. Designers of robo-advisors have been pushing the narrative that robo-advisors are not capable of having conflicts of interest because they have no human support element, and therefore will not be tempted by commission or personal relationships.[222] Designers also laud robo-advisors as the solution to remove bias from investment advice and give customers – regardless of race, color, religion, national origin, sex, age, or disability – the same fair advice.[223] However, these narratives are problematic because they only focus on an individual investor-client conflict while allowing for "firm-client conflict[s]" to persist.[224] When programmers design robo-advisors or artificial intelligence tools, they need to decide the factors for which they are optimizing the system.[225] In the finance realm, brokerage app programmers are likely to optimize the revenues or performance of the platforms.[226] Therefore,

considered in isolation but also when considered within a series of transactions).

[220] *See* Tierney, *supra* note 28, at 392 (discussing patterns of noise trading on and noting that some studies show a disproportionate amount of trading in stocks that enter the leaderboards on lists such as "stocks held most by clients.").

[221] Studdard, *supra* note 43, at 14 (noting that each article considered by itself likely falls within the safe harbor, but considered in proximity to the offer link "appears calculated to include a person without experience to begin trading.").

[222] Ji, *supra* note 100, at 1563 (finding that "robo-advisors can provide the same services at a fraction of the cost" and "are less impacted by "emotional or cognitive biases.").

[223] *See id*. at 1572 (describing the idea that robo-advisors "avoid the 'representative-level' conflicts that result when human judgment is involved.").

[224] *Id*. at 1572 (explaining that arguments in favor of robo-advisors do not consider the existence of firm-wide conflicts of interest).

[225] Gensler, *supra* note 91 (explaining that conflicts of interest may arise when the platform optimizes the interests of the advisor over the interests of the client).

[226] *Id*. (welcoming feedback on "whether there are conflicts of interest inherent to an advisors' use of predictive data analytics").

robo-advisors might not be designed to put the interests of the client over the platform's revenues.[227] Also, programmers might be influenced by firms' incentives and subconsciously bias algorithms to put the firm first.[228]

The SEC can use the RBI regulations to combat these conflicts of interest issues in two major ways. First, the SEC can advise companies that stock leadership boards or education articles that nudge investors to invest in certain products will be considered a "recommendation" under the RBI regulations.[229] Therefore, brokerage firms will have to comply with the conflicts of interest obligations under the RBI regulations and must disclose all limitations, fees, and any interests the brokers may have in giving the recommendation.[230] This will allow brokerage firms to continue to use leadership boards or education articles to attract new investors and provide better customer service while also protecting investors from misleading data or false information. With disclosure, retail investors will be able to make better informed decisions while brokerage firms will still be able to increase customer interaction.[231]

Second, RBI regulations require that brokerage firms act in the best interest of retail customers when recommending securities, investment strategies involving securities, and account types, and prohibit them from placing their interests ahead of the retail customers'.[232] The rule does not distinguish whether the recommendation is in person or online, protecting the customer

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[227] *Id*. ("When an advisor provides advice, in part through the use of PDAs, do those algorithms optimize for the investor's interests?").
[228] Ji, *supra* note 100, at 1573 ("Even when not done intentionally, the humans who design robo-advisor algorithms may be influenced by firm incentives.").
[229] *See* Studdard, *supra* note 43, at 2 (calling on regulators to adopt "a broader, more functional lens" of what qualifies as a recommendation, including "tactics and stimuli used to induce trading").
[230] *See id.* at 13 (adding that under RBI, brokerage communications must be fair, balanced, and devoid of false, misleading, or exaggerated statements); *id.* at 9 (mentioning, for instance, that RBI "requires brokers to disclose if they earn revenue from payment for order flow.").
[231] *See id.* at 15 (explaining that "bite-sized articles" makes investors feel overconfident, encouraging trading, to Robinhood's benefit).
[232] *See supra* Section II(A); *SEC Regulation Best Interest (Reg BI)*, FINRA, https://www.finra.org/rules-guidance/key-topics/regulation-best-interest (last visited Mar. 29, 2023).

equally in both settings.[233] Therefore, the SEC can inform designers of robo-advisors that they must optimize the program for the investor's benefit.[234] To do that, the robo-advisors must be designed to invest with the investor's risk appetite and return aspirations in mind rather than maximizing the firm's revenues. This will not hinder new innovation or lower fees in the brokerage industry but will require programmers to instill checks that investors' risk tolerance and best returns are being put first.

B. Fiduciary duties of brokerage firms & the Investment Advisers Act

Since investment advisors are fiduciaries with respect to the investment advisory services they provide their clients, including specific recommendations and investment advice,[235] DEPs and PDAs can be covered under a brokerage's fiduciary duties. To accomplish this, the SEC need only to declare DEPs and behavioral prompts as "advice" under FINRA's rules.[236] Then, the brokerages would need to monitor how the DEPs and artificial intelligence are affecting their customers and whether the programs are in the best interests of the customers.[237] Brokerage firms will also be required to indicate when conflicting incentives are intentionally programmed into artificial intelligence tools and put in place monitoring tools for unintentional bias.[238] They will also be required to disclose any limitations the

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[233] Regulation Best Interest: The Broker-Dealer Standard of Conduct, 84 Fed. Reg. 33,318, 33,318 (July 12, 2019) (codified at 17 C.F.R. pt. 240) (never distinguishing the standard of conduct for online communications).

[234] *See* Gary Gensler, Chair, SEC, Prepared Remarks before the Investor Advisory Committee (Mar. 10, 2022) https://www.sec.gov/news/statement/gensler-iac-2022-03-10 (stating that "[w]hen a platform also is trying to optimize for its own revenues . . . there is a conflict with its duties to investors.").

[235] *See* Commission Interpretation, *supra* note 140, at 33670 ("The investment adviser's fiduciary duty is broad and applies to the entire adviser-client relationship.").

[236] *See id* 140, at 3369–71 (remarking that fiduciary duties apply where adviser gives advice.).

[237] *See id.* at 33671 (". . . the adviser must, at all times, serve the best interest of its client and not subordinate its client's interest to its own.").

[238] *See id.* ("Under its duty of loyalty, an investment adviser must eliminate or make full and fair disclosure of all conflicts of interest which might

algorithm has, much like the EU rules.[239] This approach "expresses broadly the standard to which investment advisors are held while allowing them the flexibility to meet that standard in the context of their specific services."[240]

In addition, the SEC should declare that DEPs and PDAs are subject to Section 206 of the Investment Advisers Act. Under the Act, if the features are misleading or encourage a customer to invest in security without exposing its limitations, the brokerage firm could be found liable for damages.[241] Since the Supreme Court typically interprets this statute broadly,[242] firms will likely be extra cautious to limit their practices to the ones that are truly beneficial for the client without the need for new regulation. This will also likely lead more brokerage firms to include warnings, like that excessive trading may be injurious to financial health, to prevent liability, which will hopefully make investors lose the mindset that trading is a game while still allowing them access to truly beneficial tools.

C. **Anti-Fraud Requirements**

The anti-fraud provisions of the federal securities laws broadly prohibit manipulative and deceptive conduct and require that broker-dealers deal fairly with their customers.[243] Therefore, any DEPs or PDAs that purposefully mislead investors will be against these requirements. Any advertising of stock to create demand would likely be considered manipulative conduct, as well. Even if brokerages try to use a workaround by just linking to other sites that use DEPs or PDAs, they could still be liable under Rule 10b-5 by spreading the misleading information indirectly.[244] To ensure

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incline an investment adviser – consciously or unconsciously – to render advice which is not disinterested . . . .").

[239] *See supra* Section III(A) (laying out EU framework for regulating investment advisers).

[240] *Id*. at 33670 (describing SEC's principles-based approach).

[241] *See supra* Section II(B) (observing that Act "prohibits misstatements or misleading omissions of material facts . . . .").

[242] *See id.* (observing that Supreme Court has used Act "in a variety of circumstances.").

[243] *See supra* Section II(C) ("The anti-fraud provisions enable the SEC to regulate firms that engage in manipulative and deceptive conduct.").

[244] *Id.* ("The Supreme Court has read Rule 10b-5 broadly to deem those who disseminate a misstatement even if they are not responsible for the content of the misstatement personally liable under the Rule.").

compliance, the SEC should issue guidance explaining examples of such conduct that would be against the requirements. This will put brokerage firms on notice that any purposefully manipulative information, such as false leader boards, will be subject to liability and limit this behavior while also allowing brokerage firms that use tools for information purposes only to continue to do so.

In addition to declaring that DEPs and PDAs are "recommendations" and therefore fall under the existing framework, the SEC should do a few more things to ensure the best regulatory outcome.

First, the SEC needs to enforce the regulations more effectively by making the mandatory disclosures easier to read for retail investors. Currently, many retail investors do not know how to read a financial statement or do not understand the risks they are taking even when the apps disclose them.[245] Since many apps claim that DEPs educate retail investors on their choices, the SEC should make teaching investors how to understand the risk mandatory on the apps or put disclosures in plain language that most retail investors can understand under the existing regulation. To do this, the SEC could mandate brokerage apps institute quizzes or questions to test understanding.

Next, the SEC should mandate online brokerage firms to disclose pay structures or overall costs compared to the national average so retail investors can understand how the firm will compare and provide investors metrics to look for when investing in certain stocks. This will allow brokerage firms and investors to the benefits of "zero-commission" trading, while protecting investors from hidden costs.

The SEC should also consider the underlying business purpose of a firm's use of DEPs. For example, many firms may utilize DEPs to encourage investment behavior that is inconsistent with a client's objectives or unsuitable for a client's risk tolerance. In such cases, if SEC enforcement focused on the nature or character of a particular DEP without considering the firm's business purpose for

[245] Oscar Contreras, *Financial Literacy in the United States,* MILKEN INSTITUTE (2021) https://milkeninstitute.org/sites/default/files/2021-08/Financial%20Literacy%20in%20the%20United%20States.pdf ("The empirical evidence suggests that many individuals in the US – both young and old – lack the basic knowledge and skills required to engage in sound financial decision-making . . . .").

encouraging such investment behavior, a likely consequence would be to deter other firms' use of similar DEPs for beneficial purposes.[246] By evaluating the use of DEPs discretely and in the specific context of a firm's business purpose, the SEC could mitigate the chilling effect of beneficial DEPs.

D. **FINRA's Regulatory 5310 and Best Execution**

As previously stated, under rule 5310, FINRA requires brokerage firms to perform "reasonable diligence" to obtain the best market for a security and utilize the market to find the best price for the consumer.[247] This regulation likely implicates PDAs or data intelligence tools. The SEC should inform brokerage firms that procedures must be in place to ensure the robo-advisors or PDAs are returning the best price for the consumer in the most favorable market. If firms do not do this, then the SEC could claim that the firms are violating their reasonable diligence obligations.

In addition, the Best Execution Regulations demand obtaining the best price for the consumer.[248] These regulations could implicate brokerage apps in general by requiring more checks and balances for payment to order flow systems. Payment to order flow is "the practice of wholesale market makers paying brokers (typically retail brokers) for their clients' order flow."[249] By trading this way, brokers could violate their conflict of interest obligations by routing the orders to the highest bidder rather than the best market to find the best price.[250] Therefore, a brokerage firm's best execution obligations are likely implicated by payment for order flow because the firm is incentivized to direct orders to exchanges through which it receives

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[246] Erin Simpson & Adam Conner, *How to Regulate Tech: A Technology Policy Framework for Online Services*, CAP (Nov. 16, 2021), https://www.americanprogress.org/article/how-to-regulate-tech-a-technology-policy-framework-for-online-services/ ("To better craft policy responses to these issues, regulators must widen their aperture beyond a flattened idea of "content" to look upstream at business models and design choices . . . .").
[247] *See supra* Section II(D).
[248] *Id.*
[249] CFA INSTITUTE, PAYMENT FOR ORDER FLOW 2 (2016), https://www.cfainstitute.org/-/media/documents/issue-brief/payment-for-order-flow.ashx.
[250] *Id.* ("Specifically, brokers may be incentivized to route customer orders to the highest bidder rather than to the market maker or trading venue offering the best prices and fastest execution.").

compensation rather than objectively routing orders to the exchange with the best price for the customer. By forcing more checks and balances on payment to order flow schemes, firms will have to choose a market maker based on its best average returns rather than the best commission amount for itself. This will allow brokerage firms to still offer "zero-commission" trading to give access to more retail investors, while still protecting investors from potential low-quality trades.

VII. ***Conclusion***

The increasing sophistication of DEPs and predictive analytic tools show the need to protect retail investors but also show a regulatory challenge to strike a balance between protecting investors and not stifling new investment. More unsophisticated retail investors are joining the market than ever before and DEPs risk compelling investors to trade in financial instruments that they either do not wish to trade in or do not understand. However, DEPs also enhance financial literacy and have the potential to allow new investors to grow their wealth and reduce the wealth gap. With the strength of the existing regulatory framework, the SEC should proceed cautiously because new regulations could stifle innovation and ultimately discourage firms from developing beneficial communications for existing and prospective customers. The best approach the SEC could take is to inform brokerage firms that these new tools would fall under the current regulatory framework including the Regulation Best Interest regulations, the Investment Advisor Act, the Anti-Fraud provisions, and FINRA's Best Execution and fiduciary duty obligations. The SEC should also outline specific ways that it will enforce this regulation by giving examples in a notice. This way, the SEC will better protect investors from the dangers of deceptive practices while retaining the flexibility to regulate new technology that is introduced into the market.