

SECURITIES AND EXCHANGE COMMISSION

[Release Nos. 34-92766; IA-5833; File No. S7-10-21]

RIN 3235-AN00

Request for Information and Comments on Broker-Dealer and Investment Adviser Digital Engagement Practices, Related Tools and Methods, and Regulatory Considerations and Potential Approaches; Information and Comments on Investment Adviser Use of Technology to Develop and Provide Investment Advice

AGENCY: Securities and Exchange Commission.

ACTION: Request for information and comment.

SUMMARY: The Securities and Exchange Commission (the “Commission” or the “SEC”) is requesting information and public comment (“Request”) on matters related to: broker-dealer and investment adviser use of “digital engagement practices” or “DEPs”, including behavioral prompts, differential marketing, game-like features (commonly referred to as “gamification”), and other design elements or features designed to engage with retail investors on digital platforms (e.g., websites, portals and applications or “apps”), as well as the analytical and technological tools and methods used in connection with these digital engagement practices; and, investment adviser use of technology to develop and provide investment advice. In addition to or in place of responses to questions in this release, retail investors seeking to comment on their experiences may want to submit a short [Feedback Flyer](#).

DATES: Comments should be received on or before October 1, 2021.

ADDRESSES: Comments may be submitted by any of the following methods:

Electronic comments:

- Use the Commission’s internet comment form
(<https://www.sec.gov/rules/submitcomments.htm>); or

- Send an email to *rule-comments@sec.gov*. Please include File No. S7-10-21 on the subject line.

Paper comments:

- Send paper comments to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549-1090.

All submissions should refer to File Number S7-10-21. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method of submission. The Commission will post all comments on the Commission's website (<http://www.sec.gov>). Comments are also available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10 a.m. and 3 p.m.

Operating conditions may limit access to the Commission's public reference room. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make publicly available. Retail investors seeking to comment on their experiences with online trading and investing platforms may want to submit a short [Feedback Flyer](#), available at Appendix A.

Studies, memoranda, or other substantive items may be added by the Commission or staff to the comment file during this Request. A notification of the inclusion in the comment file of any such materials will be made available on the Commission's website. To ensure direct electronic receipt of such notifications, sign up through the "Stay Connected" option at www.sec.gov to receive notifications by email.

FOR FURTHER INFORMATION CONTACT: Division of Trading and Markets, Office of Chief Counsel, at (202)-551-5550 or tradingandmarkets@sec.gov; Division of Investment Management, Investment Adviser Regulation Office at (202) 551-6787 or IARules@sec.gov.

SUPPLEMENTARY INFORMATION: The Commission is requesting information and public comment on matters related to (1) broker-dealer and investment adviser use of digital engagement practices on digital platforms, as well as the analytical and technological tools and methods used in connection with such practices; and (2) investment adviser use of technology to develop and provide investment advice.

I. INTRODUCTION

A. BACKGROUND

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. This increased accessibility has been one of the many factors associated with the increase of retail investor participation in U.S. securities markets in recent years.

As discussed in Section II of this Request, firms employ a variety of digital engagement practices when interacting with retail investors through digital platforms. Examples of digital engagement practices include: social networking tools; games, streaks and other contests with prizes; points, badges, and leaderboards; notifications; celebrations for trading; visual cues; ideas presented at order placement and other curated lists or features; subscriptions and membership tiers; and chatbots.

Various analytical and technological tools and methods can underpin the creation and use of these practices, such as predictive data analytics and artificial intelligence/machine learning

(“AI/ML”) models. 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.

As discussed in Section III of this Request, some investment advisers also use these tools to develop and provide investment advice, including through online platforms or as part of more traditional investment advisory services. Investment advisers can use analytical tools to learn more about their clients and develop and provide investment advice based on that information. These developments may provide potential benefits and risks for investment advisers and their clients.

B. PURPOSE OF REQUEST

The Commission is issuing this Request related to the use and development of digital engagement practices by firms on their digital platforms, in order to:

1. Assist the Commission and its staff in better understanding and assessing the market practices associated with the use of DEPs by firms, including: (1) the extent to which firms use DEPs; (2) the types of DEPs most frequently used; (3) the tools and methods used to develop and implement DEPs; and (4) information pertaining to retail investor engagement with DEPs, including any data related to investor demographics, trading behaviors, and investment performance.
2. Provide a forum for market participants (including investors), and other interested parties to share their perspectives on the use of DEPs and the related tools and methods,

including potential benefits that DEPs provide to retail investors, as well as potential investor protection concerns.¹

3. Facilitate an assessment by the Commission and its staff of existing regulations and consideration of whether regulatory action may be needed to further the Commission's mission including protecting investors and maintaining fair, orderly, and efficient markets in connection with firms' use of DEPs and related tools and methods.

In addition to addressing the questions below, the Commission encourages commenters to provide or identify any data and other information in furtherance of the purposes articulated in this Request.

II. DIGITAL ENGAGEMENT PRACTICES, RELATED TOOLS AND METHODS, AND REGULATORY CONSIDERATIONS AND POTENTIAL APPROACHES

A. DEPS

The Commission is issuing this Request, in part, to develop a better understanding of the market practices associated with firms' use of DEPs, which broadly include behavioral prompts, differential marketing, game-like features, and other design elements or features designed to engage retail investors. The Commission is aware of a variety of DEPs that may be used by firms, including the following:²

¹ To further enable retail investors to share their perspectives, the Commission is issuing a user-friendly "Feedback Flyer." The Commission has determined that this usage is in the public interest and will protect investors, and therefore is not subject to the requirements of the Paperwork Reduction Act of 1995. See Sections 19(e) and (f) of the Securities Act of 1933 ("Securities Act"), 15 U.S.C. 77s(e) and (f). Additionally, for the purpose of developing and considering any potential rules relating to this rulemaking, the agency may gather from and communicate with investors or other members from the public. See Securities Act section 19(e)(1) and (f), 15 U.S.C. 77s(e)(1) and (f).

² Broker-dealers' and investment advisers' use of DEPs and the related tools and methods must comply with existing rules and regulations. By identifying observed practices and soliciting comment on them, the Commission is not expressing a view as to the legality or

- Social Networking Tools. Digital platforms may be linked to internet content, enabling users to access social sentiment on the platform. Some digital platforms may embed social networking tools into their platforms, or enhance existing tools to allow an investor to create an on-line persona or avatar. Certain digital platforms enable investors to copy the trades of other investors (known as “copy trading”) in certain types of investments.³
- Games, Streaks and Other Contests with Prizes. Some digital platforms may employ games that use interactive graphics and offer prizes (e.g., slot-machine style interactive graphics, interactive wheels of fortune, or virtual “scratch-off” lottery tickets), for example, in connection with account opening. Some digital platforms may offer prizes to investors for completing certain “to-do lists” or tasks frequently within a specified time period (known as “streaks”) or for other types of contests (including performance-based contests). Prizes may include free stock, cash, gaining access to additional features on the platforms, or a free trial period for a subscription to certain market data or levels of service. Tasks that may generate awards include referring others to the platform, engaging in community forums, linking a bank account, funding an account, trading, or promoting the app on social media.
- Points, Badges, and Leaderboards. Some digital platforms may use points or similar “scorekeeping” related to a specific area of activity. For example, some platforms offer “paper trading” (i.e., simulated trading) competitions that enable investors to practice

conformity of such practices with the federal securities laws and the rules and regulations thereunder, nor with the rules of self-regulatory organizations (“SROs”).

³ It is our understanding that copy trading is currently offered in certain investments, such as cryptocurrencies, in the U.S. and may be offered more broadly in other jurisdictions. Copy trading in securities may raise regulatory concerns under the U.S. federal securities laws, including potential broker-dealer and investment adviser status issues.

trading without real money. 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.

- Notifications. Some digital platforms may use notifications via email, text, or other means (e.g., push notifications on mobile devices). In some cases, investors can opt-in or opt-out of notifications; in others, notifications may be set by default with no ability to opt-out. Investors may receive notifications indicating a certain stock is up or down, noting a list of stocks qualifying as top “movers” (i.e., largest percentage change in price), or reminding them that it has been a certain number of days since they last engaged in a trade. Notifications may also be used to attempt to reassure investors during periods of market volatility.
- Celebrations for Trading. Some digital platforms may have embedded animations and graphics, such as digital confetti or crowds applauding, that “celebrate” when investors enter orders to purchase stock or options.
- Visual Cues. Interface design elements may provide visual cues, including by displaying certain information more prominently than other information. In some cases, visual cues are targeted specifically to the investor. For example, some digital platforms’ user interfaces shift the coloration of the entire screen between green and red based on an investor’s portfolio performance. Some digital platforms present relevant news or other pieces of information to the user immediately once the portfolio turns negative.
- Ideas Presented at Order Placement and Other Curated Lists or Features. Some digital platforms may present “ideas” prior to allowing the investor to place an order. These ideas may involve curated lists or features, news headlines, etc.

- Subscriptions and Membership Tiers. Some firms may offer subscriptions or tiered memberships. Examples of additional features that may be provided include access to research reports, briefs, webcasts, and newspaper subscriptions; invitations to sports and industry events; credit line access; and an exemption or reduction of fees. In some cases, investors may be upgraded automatically based on balances and holdings reaching certain thresholds. Some firms may offer free subscription trials.
- Chatbots. Some digital platforms may offer chatbots, or computer programs that simulate live, human conversation. Chatbots may be offered to respond to investor inquiries relating to stock prices, account information, or customer service matters.

DEPs may be designed to encourage account opening, account funding, and trading, or may be designed solely to increase investor engagement with investing apps, as there may be value in the number of investors interacting with the platform, how often they visit, and how long they stay.

The use of DEPs carries both potential benefits and risks for retail investors. Simplified user interfaces and game-like features have been credited with making investment platforms more accessible to retail investors (in particular, younger retail investors),⁴ and assisting in the

⁴ See, e.g., Evie Liu, The Stock Market is Attracting New Investors. Here Are 3 Trends to Know., Barron's (Apr. 13, 2021), <https://www.barrons.com/articles/the-stock-market-is-attracting-new-investors-here-are-3-trends-to-know-51618273799>; Broadridge, Insights on the U.S. Investor (2020) ("Zero commission trades, mobile trading applications and the ability to acquire fractional shares are making it more attractive and easier for younger, lower asset investors to trade securities. This is bolstering Millennials' ability to participate more actively in equity investing."); Maggie Fitzgerald, Now Teenagers Can Trade Stocks With Fidelity's New Youth Investing Accounts, CNBC (May 18, 2021), <https://www.cnbc.com/2021/05/18/now-teenagers-can-trade-stocks-with-fidelitys-new-youth-investing-accounts.html?&qsearchterm=margin%20debits> ("Of the 4.1 million new accounts that Fidelity added in the first quarter of 2021, 1.6 million were opened by retail investors 35 and younger, an increase of more than 222% from a year prior."); Jennifer Sor, Young Investors Drive Increased Use of Investing Apps, Los Angeles Business Journal (Aug. 3, 2020),

development and implementation of investor education tools. Others have noted that DEPs can encourage retail investors to increase their contributions to retirement accounts and to engage in other activities that are traditionally viewed as wealth-building exercises.⁵

On the other hand, 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;⁶ (2) using trading strategies that carry additional risk (e.g., options trading and trading on margin); and (3)

<https://labusinessjournal.com/news/2020/aug/03/young-investors-drive-increased-use-investing-apps/>.

⁵ 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=4d6e1b8674ab>; Greg Iacurci, MassMutual Turns to Video Games to Boost Retirement Savings, Investment News (July 18, 2016), <https://www.investmentnews.com/massmutual-turns-to-video-games-to-boost-retirement-savings-66476>.

⁶ Some have argued that certain compensation practices (such as payment for order flow or “PFOF,” in combination with zero commissions) create incentives for firms to use DEPs to encourage frequent trading, and that these incentives may not be transparent to retail investors. See, e.g., Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide, Part II: Hearing Before the H. Comm. on Fin. Servs., 113th Cong. (2021) (statement of Vicki L. Bogan, Associate Professor, Cornell University), <https://docs.house.gov/meetings/BA/BA00/20210317/111355/HHRG-117-BA00-Wstate-BoganV-20210317.pdf>. One form of PFOF is a practice wherein wholesale broker-dealers (often referred to as “principal trading firms” or “electronic market makers”) offer payment to retail broker-dealers in exchange for the right to trade principally with (or “internalize”) their customer order flow. See 17 CFR 10b-10(d)(8). Although PFOF is not prohibited, a broker-dealer must not allow PFOF to interfere with its efforts to obtain best execution for its customers’ transactions. See Payment for Order Flow, Securities Exchange Act of 1934 (“Exchange Act”) Release No. 34902 (Oct. 27, 1994) [59 FR 55006, at 55009 & n.28 (Nov. 2, 1994)]; see also Robinhood Financial, LLC, Exchange Act Release No. 90694 (Dec. 17, 2020) (settled order) (the Commission brought an enforcement action against a broker-dealer for willfully violating Sections 17(a)(2) and 17(a)(3) of the Securities Act and Section 17(a) of the Exchange Act and Rule 17a-4 thereunder, for, among other things, failing to take appropriate steps to assess whether its higher PFOF rates were adversely affecting customer execution prices).

trading in complex securities products.⁷ 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.”⁸

In the questions below, the Commission’s request for comment pertains to all DEPs on brokerage and advisory digital platforms, including, but not limited to, those identified above.

Industry practices:

- 1.1 What types of DEPs do firms use (or in the future expect to use) on digital platforms and what are the intended purposes of each type of DEP used? For example, are particular DEPs designed to encourage or discourage particular investor actions or behaviors, such as opening of accounts, funding of accounts, trading, or increasing engagement with the app or platform? To what extent and how are firms using DEPs

⁷ In congressional hearings related to market events in January 2021, investor protection concerns were identified relating to the use of certain types of DEPs, including advertisements targeted towards specific groups of investors on digital platforms and game-like features on mobile apps. See Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide: Hearing Before the H. Comm. on Fin. Servs., 113th Cong. (2021), <https://financialservices.house.gov/calendar/eventsingle.aspx?EventID=407107>; Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide, Part II: Hearing Before the H. Comm. on Fin. Servs., 113th Cong. (2021), <https://financialservices.house.gov/calendar/eventsingle.aspx?EventID=406268>; Game Stopped? Who Wins and Loses When Short Sellers, Social Media, and Retail Investors Collide, Part III: Hearing Before the H. Comm. on Fin. Servs., 113th Cong. (2021), <https://financialservices.house.gov/calendar/eventsingle.aspx?EventID=407748>; Who Wins on Wall Street? GameStop, Robinhood, and the State of Retail Investing: Hearing Before the S. Comm. On Banking, Hous., & Urban Affairs, 113th Cong. (2021), <https://www.banking.senate.gov/hearings/who-wins-on-wall-street-gamestop-robinhood-and-the-state-of-retail-investing>.

⁸ See Jamie Luguri and Lior Jacob Strahilevitz, Shining a Light on Dark Patterns, 13 *Journal of Legal Analysis* 43 (2021), <https://academic.oup.com/jla/article/13/1/43/6180579>.

such as notifications (e.g., push notifications or text messages) or other design elements and features (e.g., design aesthetics in the user interface) as a means to alter (or nudge⁹) retail investor behavior or otherwise to encourage or discourage certain behaviors or activities? If so, what types of design elements are used and how are they used? Please explain any such specific design elements, how they intend to encourage specific retail investor behaviors, and whether and to what extent they are achieving their intended purposes.

1.2 To what extent do firms that utilize DEPs provide retail investors the ability to opt in or out of interacting with those DEPs when using the firm's digital platform? To what extent, and how, are firms tailoring or personalizing DEPs to a particular retail investor?

1.3 What types of firms use DEPs on their digital platforms, and on what types of platforms? Are these practices more prevalent among certain types of firms, or on certain types of platforms? How prevalent is the use of DEPs by broker-dealers? How prevalent is the use of DEPs by investment advisers? Which types of DEPs are most prevalent? For firms that have chosen not to use DEPs or certain DEPs, what are their reasons? Are firms that are not currently using DEPs considering adopting such features in the future?

1.4 What market forces are driving the adoption of DEPs on digital platforms and how? For example, to what extent and how is the use of DEPs influenced or driven by

⁹ Richard Thaler and Cass Sunstein define “nudge” as “any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives.” See Richard H. Thaler and Cass R. Sunstein, Nudge: Improving Decisions About Health, Wealth, and Happiness 6 (Penguin Books 2009).

- market practices related to compensation and revenue (e.g., “zero commission” and PFOF)? What types of compensation and revenue arrangements influence or drive market practices related to the use of DEPs? Do such arrangements vary across product types and asset classes (e.g., options, other complex products)? How does the competition for new customers or clients or the retention of existing customers or clients drive firm adoption or use of DEPs?
- 1.5 Are DEPs used to promote or otherwise direct retail investors to specific securities or certain types of securities, investment strategies, or services? If so, what types of securities, investment strategies, and services, what types of DEPs are used, and how are the DEPs used for these purposes? Do firms use DEPs to promote or otherwise direct retail investors to securities, investment strategies, or services that are more lucrative for the firm or that may be riskier to the retail investor than others – such as: margin services, options trading, proprietary products, products for which the firm receives revenue sharing or other third-party payments, or other higher fee products? Do firms use DEPs that are or can be tailored to the retail investor’s investment profile and risk tolerance? If so, how? If not, why not?
- 1.6 To what extent and how do firms monitor the use and proper functioning of DEPs? For example, to what extent and how do firms monitor notifications that retail investors receive or see from or on the firm’s digital platforms?
- 1.7 To what extent and how do firms use DEPs or alter their use of DEPs in response to changes in the market price volatility and trading volumes in securities, both for specific assets and the market as a whole? For example, to what extent and how do firms use DEPs to notify retail investors of market events? To what extent and how

- do firms use DEPs to notify retail investors of firm policies and procedures or other actions that may be taken by the firm, such as in response to market events (e.g., imposition of trading restrictions)? What type of DEPs are used, what information is communicated through DEPs in such circumstances, and what is the timing of such communications?
- 1.8 Are firms seeking to use DEPs specifically to increase investor education? If so, how? What type of investor educational content is provided, how is that content chosen, and what types of DEPs are used? For example, are firms using DEPs to educate investors about the risks of certain activities, such as trading on margin or options trading? Are firms using DEPs to help investors understand how to make investment choices that are consistent with their investment objectives? If so, what types of DEPs are they using for these purposes, and how are they used? Have firms tested or otherwise observed the effectiveness of any such educational efforts at increasing retail investor knowledge and understanding of investing concepts including risks? Please explain and include any relevant data or information.
- 1.9 Do firms use DEPs to encourage longer-term investment activities, including, but not limited to, increased contributions to or establishment of retirement accounts? If so, how?
- 1.10 Do firms that utilize DEPs offer live, phone-based customer support or customer support through live, human-directed online support (i.e., online conversations that are not through an automated chatbot)? Does the availability of this type of support depend on the type of account or investments held (e.g., investors holding riskier products) or on account balances or asset thresholds? If firms offer live, phone-based

customer support or human-directed online support, what training do firms offer their customer support personnel, and what monitoring and quality assurance programs are used? How do firms interact with investors when the platform is unavailable—for example, when the firm has lost internet service or when the platform is undergoing maintenance? What alternative means of communication are available to investors during those times?

- 1.11 To what extent and how do firms target certain specific groups of retail investors (including prospective customers or clients) through DEPs? What types of DEPs are used, and how are they targeted to specific retail investors or groups of retail investors? What factors do firms look to when deciding which groups of retail investors to target for each type of DEP?
- 1.12 What feedback, positive or negative, or complaints do firms receive from retail investors relating to the use of DEPs?

Investor characteristics and practices:

- 1.13 What types of retail investors are customers or clients of firms that utilize DEPs? How does this customer or client base differ, if at all, from those firms that do not use such features—including as to age, prior investment experience, education, net worth, risk tolerance, liquidity needs, investment time horizon, and investment objectives? What types of retail investors engage most frequently with DEPs on platforms that use them? Do firms utilize DEPs for only certain types of customers or clients? If so, which ones and why? To what extent and how have DEPs enabled firms to reach, educate, and provide experience to first-time retail investors? To what extent and how have DEPs enabled retail investors to access specific investments or investment

- strategies more quickly and/or with less investing experience than under traditional methods? Please provide or identify any relevant data and other information.
- 1.14 What trading or investment activities are retail investors engaging in through digital platforms that use DEPs? For retail investors who were investing prior to using digital platforms that use DEPs, how have their activities with respect to trading and investing changed since they started using such platforms and/or were first exposed to DEPs? For example, how often do retail investors engage in trading or investing through such platforms, how often did they engage in trading or investing prior to using such platforms, and how has such frequency changed as a result of using such platforms and/or being exposed to DEPs? How often do retail investors engage in other ways with such platforms (e.g., education, social features, and games)? How do retail investors learn of these platforms (e.g., news coverage, social media, internet search, paid advertisements)? Do firms collect data on how retail investors learn about or use the platforms, such as by asking as part of account opening? Please provide or identify any relevant data and other information.
- 1.15 What customer and client trends have been observed in connection with or as a result of the adoption and implementation of DEPs? Specifically, is data available regarding changes in customer or client behavior, including in accounts opened, amount invested, frequency of deposits, order frequency, order size (including fractional shares), types of securities traded, the risk profiles of securities that are traded, use of margin, volume of customer complaints, and the adoption and use of new features on the firms' digital platforms? Is there data showing how, for customers with a similar investment profile, these changes compare with any changes

in the behavior of customers or clients of firms that do not utilize DEPs? Is there data regarding numbers or percentages of new accounts opened by retail investors that received targeted communications from the firm as compared to new accounts opened by retail investors that had received no prior communications from the firm? Please provide or identify any relevant data and other information. What experience did retail investors have in the market prior to interacting with DEPs? What percentage of retail investors invested for the first time after interacting with a DEP? What role did DEPs play in their decision to begin investing?

Public perspectives and data:

- 1.16 What are the benefits associated with the use of DEPs from the perspective of firms, retail investors, and other interested parties? How do these benefits differ depending upon the type of feature used? Are there specific types of DEPs or specific uses of DEPs that have the potential to be particularly beneficial to retail investors? Are there significant investor protection benefits that arise from the use of DEPs generally or particular DEPs? Which particular DEPs and why? Are there ways in which DEPs are particularly successful at conveying information to retail investors in a way that they can process and implement effectively? Please provide or identify any relevant data and other information.
- 1.17 What are the risks and costs associated with the use of DEPs from the perspective of firms, retail investors, and other interested parties? How do these risks or costs differ depending upon the type of feature used? Are there significant investor protection concerns that arise from the use of DEPs generally or particular DEPs? Are there particular DEPs that may pose unique risks or elevated investor protection concerns? Are there characteristics of particular DEPs that may encourage retail investors to

- engage in more frequent trading or invest in higher risk products or strategies? Please provide or identify any relevant data and other information.
- 1.18 What experience do retail investors have with DEPs? Do retail investors believe that DEPs have caused a change in their investing behavior or type of investments? If so, how? Do retail investors feel like DEPs help or hurt their overall investment performance? Do retail investors believe DEPs have helped increase their understanding of securities markets and investing? If so, how? Do retail investors believe DEPs have made trading, investing, and monitoring their investments more or less accessible to them? Do retail investors believe DEPs have increased or decreased the benefits or risks of trading or investing in securities products? Do retail investors believe that they would have invested in the markets if only more traditional methods were available? Do retail investors believe that they would trade less frequently, invest in different products, or use different investment strategies if only more traditional methods were available?
- 1.19 Do retail investors believe they are receiving investment advice or recommendations from DEPs or certain types of DEPs? If so, please explain. What types of DEPs do retail investors believe are most beneficial, and what types of features are most harmful, in meeting their own trading or investment objectives?
- 1.20 For retail investors who have previously invested with the assistance of a financial professional, how do they believe their investing experience has changed as a result of interacting with a digital platform as opposed to a financial professional?
- 1.21 How do commenters view the educational services currently provided by digital platforms? How could firms adopt or modify DEPs to facilitate and increase

- opportunities for investor education and encourage longer-term investment activities, including, but not limited to, through increased contributions to or establishment of retirement accounts?
- 1.22 What similarities and differences exist between the functionality, and overall user experience, including with respect to DEPs, on a digital trading or investment platform versus similar practices on digital platforms in other contexts (e.g., shopping, fitness, entertainment)? Does a retail investor's experience with these types of features in other contexts affect the retail investor's trading or investment activity, and their engagement with the broker-dealer or investment adviser's digital platform where DEPs are employed? Do commenters believe that certain types of DEPs are more, less, or as appropriate in the investing context than in other contexts? What types of features and why?
- 1.23 Have researchers (including in the fields of behavioral finance, economics, psychology, marketing, and other related fields) studied the use of DEPs by broker-dealers and investment advisers? In particular, how have these practices been studied or observed to influence or reinforce the behavior of retail investors? To the extent retail investors have shifted from investing through human interaction (with a financial professional) to digital interaction (on a digital platform), how has that shift affected the behavior of retail investors? Please identify any relevant literature or data, including research related to the use of similar practices in other fields that could assist the Commission in its consideration of these issues.
- 1.24 Is there research in the fields of experimental psychology and marketing that contains evidence regarding the ability of DEPs to influence retail investors? Are there

- findings in those fields that suggest retail investors may not be fully aware that they have been influenced by a particular DEP?
- 1.25 Do studies of gambling or addiction offer evidence regarding whether and to what extent the immediate positive feedback provided by certain DEPs may influence retail investor decision-making?
- 1.26 How do commenters view the disclosures that firms are providing in connection with or specifically addressing the use of DEPs and the timing of such disclosures? In particular, how effective are disclosures at informing retail investors of any associated conflicts of interest presented by the use of DEPs and how DEPs could influence them and their trading and investing behavior? How accessible are these disclosures to retail investors engaging with DEPs? Please identify any relevant data or other information.

B. DEP-RELATED TOOLS AND METHODS

In order to develop, test, and implement these practices, and thereafter to assess their effectiveness, firms may use numerous analytical and technological tools and methods.¹⁰ From a technological perspective, these tools and methods can employ predictive data analytics and AI/ML models—including deep learning, supervised learning, unsupervised learning, and reinforcement learning processes.¹¹ These tools and methods can be designed to build and adapt

¹⁰ In some cases, firms may rely on in-house and proprietary tools and methods to develop, test and implement DEPs, and in others, firms may use third-party service providers to assist in the DEP development process.

¹¹ See, e.g., Department of the Treasury et al., Request for Information and Comment on Financial Institutions' Use of Artificial Intelligence, Including Machine Learning (Feb. 2021) [86 FR 16837, 16839-40 (Mar. 31, 2021)] (“Treasury RFI”); FINRA, Artificial Intelligence (AI) in the Securities Industry 5 (June 2020) (“FINRA AI Report”), <https://www.finra.org/sites/default/files/2020-06/ai-report-061020.pdf>; Financial Stability

DEPs based on observable investor activities. Such adaptations may be based on the AI/ML models’ understanding of the neurological rewards systems of retail investors (obtained in the interactions between each retail investor and the firm’s investment platform), and may be utilized to develop investor-specific changes to each retail investor’s user experience.

Relatedly, firms that utilize AI/ML models may utilize model risk management to provide a governance framework for these models throughout their life cycle in order to account for AI/ML-specific risks. Technological tools and methods also include the use of natural language processing (“NLP”) and natural language generation (“NLG”). These specific uses of AI/ML may be employed to transform user interfaces and the interactions that retail investors have on digital platforms by developing an understanding of the investor’s preferences and adapting the interface and related prompts to appeal to those preferences.¹²

Beyond technological tools, firms may engage in various forms of research in order to help shape the DEPs developed and implemented on their platforms. This may include consultations with behavioral science professionals, and cross-industry research intended to identify those customer engagement practices used in other industries that have proven most effective.

Industry practices:

- 2.1 To what extent, and how, do firms use (or in the future expect to use) tools based on AI/ML (including deep learning, supervised learning, unsupervised learning, and

Board, Artificial Intelligence and Machine Learning in Financial Services: Market Developments and Financial Stability Implications (Nov. 1, 2017) (“FSB AI Report”), <https://www.fsb.org/wp-content/uploads/P011117.pdf>.

¹² See, e.g., FSB AI Report, *supra* note 11, at 14-15 (finding that chatbots are being introduced by a range of financial services firms, often in mobile apps or social media, and that chatbots are “increasingly moving toward giving advice and prompting customers to act”).

- reinforcement learning) and NLP and NLG, to develop and evolve DEPs? What are the objective functions of AI/ML models (e.g. revenue generation)? What are the inputs relied on by those AI/ML models (e.g. visual cues or feedback)? Does the ability to collect individual-specific data impact the effectiveness of the ML model in maximizing its objective functions?
- 2.2 To what extent, and how, do firms use (or in the future expect to use) behavioral psychology to develop and evolve platforms or DEPs? To what extent, and how, do firms use (or in the future expect to use) predictive data analytics to develop and evolve DEPs? To what extent, and how, do firms use “dark patterns”¹³ in connection with DEPs? To what extent do firms utilize these types of tools, analytics, and methods to modify DEPs over time, tailored to a specific retail investor’s history on the platform? Which types of tools and methods are used for these and other purposes?
- 2.3 What types of research, information, data, and metrics are firms collecting, acquiring, and using in connection with the tools and methods identified above, or otherwise to design, implement, and modify DEPs and to assess their effectiveness? What are the sources for such information and data (e.g., proprietary research, user data, third-party behavioral research, consultants, other service providers)? Does this research, information, data, and metrics, indicate whether DEPs affect trading frequency, volume, and results? If so, how?
- 2.4 How are firms using cross-industry research and sources to design, implement, and modify DEPs? Specifically, how are firms using techniques employed, and lessons

¹³

See supra note 8.

- learned, within industries like retail shopping, video gaming, and video or music streaming services? What features originally adopted in other industries have been utilized and implemented by firms to increase user engagement? How has the use of such features impacted investor activity on digital platforms?
- 2.5 To what extent, and how, do firms test or otherwise assess how their DEPs affect investor behavior and investing outcomes? What metrics are used for these assessments? What data and other results have such tests and assessments yielded? Have firms found that DEPs can be developed, evolved and implemented in order to affect retail investors' trading or investment behavior, either individually or as a group? Have firms found that those behaviors can be affected in a statistically significant way? If so, how? What controls do firms have in place to monitor the impact of DEPs on investor outcomes? How do firms incorporate any testing and monitoring into their policies and procedures?
- 2.6 How do firms develop, test, deploy, monitor, and oversee the tools and methods they use, including any AI/ML models (including deep learning, supervised learning, unsupervised learning, and reinforcement learning), NLP, NLG, or other types of artificial intelligence? To what extent are these tools and methods proprietary to firms or offered by third parties? Do relationships with vendors result in conflicts of interest, and if so, what types of conflicts of interest? For example, are broker-dealers or investment advisers affiliated with these providers, or does compensation of the provider vary based upon investor activity? What formal governance mechanisms do firms have in place for oversight of the vendors they use for these purposes? What

- model risk management steps do firms undertake? How do firms incorporate these practices and mechanisms into their policies and procedures?
- 2.7 What type of data concerning retail investors is used to develop, evolve, implement, test and run DEPs? How is this data used? For example, are firms using data on how retail investors—individually and/or when grouped together—have engaged with their digital platform (including trading or investment activity) following exposure to DEPs? If so, how? Are firms tailoring or personalizing DEPs to individual retail investors or groups (or sub-groups) of retail investors? If so, how? Are firms collecting information about specific identifiers attributable to particular retail investors or groups (or sub-groups) of retail investors? If so, what types of specific identifiers are collected? Do firms use such identifiers (or others) in connection with determining the location of retail investors? If so, how do firms use location information? Do firms seek to cause any particular types of engagement with DEPs? If so, how? Are there other ways firms are using data concerning retail investors to develop, evolve, implement, test, and run DEPs?
- 2.8 To what extent do firms purchase data from third-party vendors, including data concerning retail investors, to develop, evolve, implement, test, and run DEPs? How are firms utilizing data acquired from third-party vendors to develop, evolve, implement, test, and run DEPs? Are firms using data obtained from third-party vendors to tailor or personalize DEPs to individual retail investors? If so, how? To what extent do firms sell or otherwise share data about their own customers' or clients' behavior on their digital platforms, and who are the primary purchasers or recipients of that data?

- 2.9 To the extent that firms use AI/ML to develop, evolve, implement, test, and run DEPs, are they ensuring that the AI/ML is explainable and reproducible?¹⁴ If so, how?
- 2.10 Are there any particular challenges or risks that firms face in using AI/ML (including deep learning, supervised learning, unsupervised learning, and reinforcement learning), including AI developed or provided by third parties? If so, what are they and how do firms address such challenges or impediments and any risks associated with them? Have firms found that using AI/ML or retail investor data gathered in connection with DEPs raises unique issues related to financial privacy, information security, or identity theft prevention?
- 2.11 To what extent and how do firms employ controls to identify and mitigate any biases or disparities that may be perpetuated by the use of AI/ML models¹⁵ in connection

¹⁴ See, e.g., Treasury RFI, at 16839-40 (describing explainability as “how an AI approach uses inputs to produce outputs” and describing challenges associated with lack of explainability); see also FSB AI Report, at 2 (stating that the “lack of interpretability or ‘auditability’ of AI and machine learning models could become a macro-level risk”); Gregory Barber, *Artificial Intelligence Confronts a ‘Reproducibility’ Crisis*, *Wired* (Sept. 16, 2019), <https://www.wired.com/story/artificial-intelligence-confronts-reproducibility-crisis/>.

¹⁵ See e.g., Joy Buolamwini and Timnit Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification*, 81 *Proceedings of Machine Learning Research* 77 (2018), <https://dam-prod.media.mit.edu/x/2018/02/06/Gender%20Shades%20Intersectional%20Accuracy%20Disparities.pdf>; Ziad Obermeyer et al., *Dissecting Racial Bias in an Algorithm Used to Manage the Health of Populations*, 366 *Science* 6464, 447-453 (Oct. 25, 2019), <https://science.sciencemag.org/content/366/6464/447>; Executive Office of the President of the United States, *Big Data: A Report on Algorithmic Systems, Opportunity, and Civil Rights* pp. 6-10 (May 2016), https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/2016_0504_data_discrimination.pdf.

with the use of DEPs? For example, do firms evaluate the outputs of their AI/ML models to identify and mitigate biases that would raise investor protection concerns? Do firms utilize human oversight to identify biases that would raise investor protection concerns, in both the initial coding of AI/ML models and the resulting outputs of those models?

Public perspectives and data:

- 2.12 What are the benefits associated with the use of the tools and methods identified above (e.g., AI/ML, predictive data analytics, cross-industry research, behavioral science) in connection with the design, implementation, and modification of DEPs from the perspective of firms, retail investors, and other interested parties? How do these benefits differ depending upon the type of tools or methods? Do the tools and methods mitigate, or have the potential to mitigate, biases in the market that may have prevented participation by some retail investors (e.g., by lowering barriers to entry)? Please provide or identify any relevant data and other information.
- 2.13 What are the risks and costs associated with the use of the tools and methods identified above (e.g., AI/ML, predictive data analytics, cross-industry research, behavioral science) in connection with the design, implementation, and modification of DEPs from the perspective of firms, retail investors, and other interested parties? How do these risks differ depending upon the type of tools or methods used? What are the most significant investor protection concerns arising from or associated with the use of such tools and methods by broker-dealers and investment advisers in the context of DEPs? Please provide or identify any relevant data and other information.
- 2.14 What are the similarities and differences between the use of the types of tools and methods identified above in the context of DEPs versus other contexts? Do

- commenters believe that certain types of tools or methods are more, less, or as appropriate in the investing context than in other contexts? Please provide or identify any relevant data and other information.
- 2.15 Are there any particular challenges or risks associated with the use of AI/ML (including deep learning, supervised learning, unsupervised learning, and reinforcement learning), including AI developed or provided by third parties? If so, what are they and how should firms address such challenges or impediments and any risks associated with them? What model risk management steps should firms undertake? Does the use of AI/ML or retail investor data gathered in connection with DEPs raise unique issues related to financial privacy, information security, or identity theft prevention?
- 2.16 Have researchers (including in the fields of behavioral finance, economics, psychology, marketing, and other related fields) studied the use of such tools and methods in the context of the use of DEPs by firms, or in related contexts of individual decision-making? Please identify any relevant literature or data, including research related to the use of similar practices in other fields, that could assist the Commission in its consideration of these issues.
- 2.17 To what extent can the use of the tools and methods identified above (e.g., AI/ML models) in connection with the use of DEPs perpetuate social biases and disparities? How, if at all, have commenters seen this in practice with regard to the development and use of DEPs on digital platforms (e.g., through marketing, asset allocation, fees)? Are there AI/ML models that are more or less likely to perpetuate such biases and disparities?

C. REGULATORY ISSUES ASSOCIATED WITH DEPS AND THE RELATED TOOLS AND METHODS AND POTENTIAL APPROACHES

Broker-dealers and investment advisers are currently subject to extensive obligations under federal securities laws and regulations, and in the case of broker-dealers, rules of SROs (in particular, the Financial Industry Regulatory Authority, Inc. (“FINRA”)¹⁶) that are designed to promote conduct that, among other things, protects investors from abusive practices. Following is an overview of some of the existing statutory provisions, regulations, and rules that are particularly relevant to the use of DEPs and related tools and methods by broker-dealers and investment advisers.¹⁷

In addition to these specific obligations, federal securities laws and regulations broadly prohibit fraud by broker-dealers and investment advisers as well as fraud by any person in the offer, purchase, or sale of securities, or in connection with the purchase or sale of securities. Generally, these anti-fraud provisions cover manipulative or deceptive conduct, including an

¹⁶ Any person operating as a “broker” or “dealer” in the U.S. securities markets must register with the Commission, absent an exception or exemption. See Exchange Act section 15(a), 15 U.S.C. 78o(a); see also Exchange Act sections 3(a)(4) and 3(a)(5), 15 U.S.C. 78c(a)(4) and 78c(a)(5) (providing the definitions of “broker” and “dealer,” respectively). Generally, all registered broker-dealers that deal with the public must become members of FINRA, a registered national securities association, and may choose to become exchange members. See Exchange Act section 15(b)(8), 15 U.S.C. 78o(b)(8); 17 CFR 240.15b9-1. FINRA is the sole national securities association registered with the SEC under Section 15A of the Exchange Act. Because this Request is focused on broker-dealers that deal with the public and are FINRA member firms, we refer to FINRA rules as broadly applying to “broker-dealers,” rather than to “FINRA member firms.”

¹⁷ Broker-dealers and investment advisers are subject to a host of other obligations that are not summarized in this overview, and that may also be relevant to the use of DEPs and related tools and methods. For example, additional regulatory obligations on broker-dealers include those relating to: registration; certain prohibited or restricted conflicts of interest; fair prices, commissions and charges; and best execution. As another example, additional regulatory obligations on investment advisers include those relating to registration; certain prohibited transactions; and written codes of ethics.

affirmative misstatement or the omission of a material fact that a reasonable investor would view as significantly altering the total mix of information made available.¹⁸

*1. Existing Broker-Dealer Obligations.*¹⁹

Under the anti-fraud provisions of the federal securities laws and SRO rules, broker-dealers are required to deal fairly with their customers and observe high standards of commercial honor and just and equitable principles of trade.²⁰ A number of more specific obligations are summarized below:

- Account Opening and Other Approval Obligations. Broker-dealers must obtain certain information about their customers at account opening, under anti-money laundering

¹⁸ See Securities Act section 17(a), 15 U.S.C. 77q(a); Exchange Act section 10(b), 15 U.S.C. 78j(b); Exchange Act section 15(c), 15 U.S.C. 78o(c); Investment Advisers Act of 1940 (“Advisers Act”) section 206, 15 U.S.C. 80b-6; see also Exchange Act section 9(a), 15 U.S.C. 78i(a); see also *Basic v. Levinson*, 485 U.S. 224, 239 n.17 (1988).

¹⁹ These obligations cannot be waived or contracted away by customers. See Exchange Act section 29(a), 15 U.S.C. 78cc(a) (“Any condition, stipulation, or provision binding any person to waive compliance with any provision of [the Exchange Act] or any rule or regulation thereunder, or any rule of a [SRO], shall be void.”).

²⁰ See, e.g., Duker & Duker, Exchange Act Release No. 2350, 6 S.E.C. 386, 388 (Dec. 19, 1939) (Commission opinion) (“Inherent in the relationship between a dealer and his customer is the vital representation that the customer be dealt with fairly, and in accordance with the standards of the profession.”); see also U.S. Securities and Exchange Commission, Report of the Special Study of Securities Markets of the Securities and Exchange Commission, H.R. Doc. No. 95, at 238 (1st Sess. 1963) (“An obligation of fair dealing, based upon the general antifraud provisions of the Federal securities laws, rests upon the theory that even a dealer at arm’s length impliedly represents when he hangs out his shingle that he will deal fairly with the public.”); FINRA Rule 2010 (Standards of Commercial Honor and Principles of Trade); NASD Interpretive Material 2310-2 (Fair Dealing with Customers) (“Implicit in all member and registered representative relationships with customers and others is the fundamental responsibility for fair dealing. Sales efforts must therefore be undertaken only on a basis that can be judged as being within the ethical standards of [FINRA’s] Rules, with particular emphasis on the requirement to deal fairly with the public.”).

(“AML”) and know your customer requirements,²¹ and are required to maintain customer account information, including whether a customer is of legal age.²²

Additional obligations apply for investors to transact in certain types of securities (e.g., options) or obtain certain services (e.g., margin).²³ For example, broker-dealers

²¹ Financial institutions, including broker-dealers, are required to establish written customer identification programs (CIP), which must include, at a minimum, procedures for: obtaining customer identifying information from each customer prior to account opening; verifying the identity of each customer, to the extent reasonable and practicable, within a reasonable time before or after account opening; making and maintaining a record of information obtained relating to identity verification; determining within a reasonable time after account opening or earlier whether a customer appears on any list of known or suspected terrorist organizations designated by Treasury; and providing each customer with adequate notice, prior to opening an account, that information is being requested to verify the customer’s identity. See 31 CFR 1023.220 (Customer Identification Program for Broker-Dealers). As part of broker-dealers’ AML compliance programs, they must include risk-based procedures for conducting ongoing customer due diligence, to comply with the Customer Due Diligence Requirements for Financial Institutions (“CDD Rule”) of the Financial Crimes Enforcement Network (FinCEN). See FINRA Rule 3310 (Anti-Money Laundering Compliance Program); 81 FR 29398 (May 11, 2016) (CDD Rule Release); 82 FR 45182 (Sept. 28, 2017) (correction to CDD Rule amendments). Additionally, pursuant to FINRA Rule 2090 (Know Your Customer), all member broker-dealers must use reasonable diligence, at both the opening of a customer account, and for the duration of the customer relationship to know and retain the “essential facts” concerning each customer. Such “essential facts” include those that are necessary “to (a) effectively service the customer’s account, (b) act in accordance with any special handling instructions for the account, (c) understand the authority of each person acting on behalf of the customer, and (d) comply with applicable laws, regulations, and rules.” See FINRA Regulatory Notice 11-02 (SEC Approves Consolidated FINRA Rules Governing Know-Your-Customer and Suitability Obligations); see also 17 CFR 240.17a-3(a)(17).

²² See FINRA Rule 4512 (Customer Account Information). As a general matter, whether any particular individual is able to enter into a contract (such as that associated with opening a brokerage account) is a matter of state law, and not explicitly governed by the federal securities laws. See also 17 CFR 240.17a-3(a)(17).

²³ Approval obligations also apply for investors to engage in day-trading. See FINRA Rule 2130 (Approval Procedures for Day-Trading Accounts).

must pre-approve a customer's account to trade options on securities.²⁴ Prior to approving a customer's account for options trading, the broker-dealer must seek to obtain "essential facts relative to the customer, [their] financial situation and investment objectives."²⁵ Broker-dealers must then verify the background and financial information they obtain regarding each customer, and obtain an executed written agreement from the customer agreeing, among other things, to be bound by all applicable FINRA rules applicable to the trading of option contracts.²⁶

With respect to margin, broker-dealers are required to obtain the signature of the account owner with respect to a margin account²⁷ and to obtain a customer's written

²⁴ See FINRA Rule 2360(b)(16) (Options). FINRA has also extended the options account approval requirements of Rule 2360(b)(16), by reference, to customers seeking to place orders to buy or sell warrants. See FINRA Rule 2352 (Account Approval). Numerous exchanges that facilitate options trading apply similar standards for customer pre-approval before accepting orders for options contracts on the exchange.

²⁵ See FINRA Rule 2360(b)(16)(B).

²⁶ See FINRA Rule 2360(b)(16)(C) and (D). FINRA has also indicated that in the case of options, broker-dealers should consider whether they should provide limited account approval to a customer, based on this information. For example, customers may be approved to make purchases of puts and calls only, be restricted to covered call writing, or be approved to engage in uncovered put and call writing. See FINRA Regulatory Notice 21-15 (FINRA Reminds Members About Options Account Approval, Supervision and Margin Requirements).

²⁷ See 17 CFR 240.17a-3(a)(9).

consent.²⁸ These written consents and signatures are generally obtained by broker-dealers when a customer executes a margin agreement.²⁹

- Standard of Conduct. Regulation Best Interest (“Reg BI”) requires broker-dealers that make recommendations of securities transactions or investment strategies involving securities (including account recommendations) to retail customers to act in their best interest, and not place the broker-dealer’s interests ahead of the retail customer’s interest.³⁰ The use of a DEP by a broker-dealer may, depending on the relevant facts and circumstances, constitute a recommendation for purposes of Reg BI. Whether a “recommendation” has been made is interpreted consistent with precedent under the federal securities laws and how the term has been applied under FINRA rules.³¹ Broker-

²⁸ The written consent is a condition necessary for the broker-dealer to be able to hypothecate (i.e., pledge) securities under circumstances that would permit the commingling of customers’ securities. Broker-dealers are also required to give written notice to a pledgee that, among other things, a security pledged is carried for the account of a customer. See 17 CFR 240.8c-1 and 240.15c2-1.

²⁹ See 17 CFR 240.8c-1, 240.15c2-1, and 240.17a-3(a)(9). Margin agreements also typically state that a customer must abide by the margin requirements established by the Federal Reserve Board, SROs such as FINRA, any applicable securities exchange, and the firm where the margin account is established. See also FINRA Rule 4210(f)(8)(B) (Margin Requirements) regarding special margin requirements for day trading, including special requirements for “pattern day traders” (any customer who executes four or more day trades within five business days, provided that the number of day trades represents more than six percent of the customer’s total trades in the margin account for that same five business day period).

³⁰ 17 CFR 240.151-1; Regulation Best Interest: The Broker-Dealer Standard of Conduct, Exchange Act Release No. 34-86031 [84 FR 33318 (July 12, 2019)] (“Reg BI Adopting Release”). Following the adoption of Reg BI, which, among other things, incorporated and enhanced the principles found in FINRA’s suitability rule (Rule 2111), FINRA amended Rule 2111 to, among other things, state that the rule does not apply to recommendations subject to Reg BI. See Exchange Act Release No. 89091 (June 18, 2020) [85 FR 37970 (June 24, 2020)].

³¹ Reg BI Adopting Release, supra note 30, at 33337. The determination of whether a recommendation has been made turns on the facts and circumstances of a particular

dealers satisfy their obligations under Reg BI by complying with four specified component obligations: a disclosure obligation;³² a care obligation;³³ a conflict of interest obligation;³⁴ and a compliance obligation.³⁵ Additional suitability obligations are imposed on broker-dealers when recommending transactions in certain types of securities, such as options, to any customer.³⁶

situation. *Id.* at 33335 (“Factors considered in determining whether a recommendation has taken place include whether a communication ‘reasonably could be viewed as a “call to action”’ and ‘reasonably would influence an investor to trade a particular security or group of securities.’ The more individually tailored the communication to a specific customer or a targeted group of customers about a security or group of securities, the greater the likelihood that the communication may be viewed as a ‘recommendation.’”) (citation omitted); *see also* NASD Notice to Members 01-23 (Apr. 2001) (Online Suitability—Suitability Rules and Online Communications) (providing examples of electronic communications that are considered to be either within or outside the definition of “recommendation”). To the extent that a broker-dealer makes a recommendation, as that term is interpreted by the Commission under Reg BI, to a retail customer through or in connection with a DEP, Reg BI would apply to the recommendation.

³² The disclosure obligation requires the broker-dealer to provide certain required disclosure before or at the time of the recommendation, about the recommendation and the relationship between the broker-dealer and the retail customer. 17 CFR 240.151-1(a)(2)(i).

³³ The care obligation requires the broker-dealer to exercise reasonable diligence, care, and skill in making the recommendation. 17 CFR 240.151-1(a)(2)(ii).

³⁴ The conflict of interest obligation requires the broker-dealer to establish, maintain, and enforce written policies and procedures reasonably designed to address conflicts of interest associated with its recommendations to retail customers. Among other specific requirements, broker-dealers must identify and disclose any material limitations, such as a limited product menu or offering only proprietary products, placed on the securities or investment strategies involving securities that may be recommended to a retail customer and any conflicts of interest associated with such limitations, and prevent such limitations and associated conflicts of interest from causing the broker-dealer or the associated person to place the interest of the broker-dealer or the associated person ahead of the retail customer’s interest. 17 CFR 240.151-1(a)(2)(iii).

³⁵ The compliance obligation requires the broker-dealer to establish, maintain, and enforce written policies and procedures reasonably designed to achieve compliance with Reg BI. 17 CFR 240.151-1(a)(2)(iv).

³⁶ See, e.g., FINRA Rule 2360(b)(19).

- Disclosure Obligations. Broker-dealers are subject to a number of customer disclosure obligations, including disclosures at the inception of the customer relationship,³⁷ disclosures that must be made in conjunction with recommendations of securities transactions or investment strategies involving securities,³⁸ and certain product- or activity-specific disclosures pertaining to among others, options, margin, and day trading.³⁹ Additionally, broker-dealers are liable under the anti-fraud provisions for failing to disclose material information to their customers when they have a duty to make such disclosure.⁴⁰ Broker-dealers are also required to make disclosures to customers of their order execution and routing practices.⁴¹

³⁷ Disclosure obligations include Form CRS relationship summary (describing the broker-dealer's services, fees, costs, conflicts of interest and disciplinary history). See 17 CFR 240.17a-14.

³⁸ See 17 CFR 240.151-1 (Reg BI).

³⁹ See, e.g., FINRA Rule 2360(b)(16)(A) (requiring broker-dealers to provide certain risk disclosures when approving customers for options transactions); FINRA Rule 2264 (Margin Disclosure Statement) (specifying disclosures in advance of opening a margin account for a non-institutional customer); 17 CFR 240.10b-16 (requiring disclosures of all credit terms in connection with any margin transactions at account opening); FINRA Rule 2270 (Day-Trading Risk Disclosure Statement) (requiring that a disclosure statement be provided to any non-institutional customer that opens an account at a broker-dealer that promotes a day-trading strategy).

⁴⁰ See Basic v. Levinson, supra note 18. Generally, under the anti-fraud provisions, a broker-dealer's duty to disclose material information to its customer is based upon the scope of the relationship with the customer, which depends on the relevant facts and circumstances. See, e.g., Conway v. Icahn & Co., Inc., 16 F.3d 504, 510 (2d Cir. 1994) ("A broker, as agent, has a duty to use reasonable efforts to give its principal information relevant to the affairs that have been entrusted to it.").

⁴¹ See generally 17 CFR 242.605 and 242.606 (Regulation NMS Rules 605 and 606). For example, under NMS Rule 606, broker-dealers must provide public reports concerning the venues to which they route customer orders for execution and discuss material aspects of their arrangements with these execution venues, including PFOF that broker-dealers receive from the venues. Pursuant to amendments implemented in 2020, these reports require enhanced specificity concerning PFOF and other types of practices that may

- Reporting and Other Financial Responsibility Requirements. Broker-dealers are subject to comprehensive financial responsibility rules, including reporting requirements under Exchange Act Rule 17a-5, minimum net capital requirements under Exchange Act Rule 15c3-1, and customer protection requirements under Exchange Act Rule 15c3-3.⁴² Broker-dealers are also subject to various rules relating to margin, including, for example, disclosure and other requirements when extending or arranging credit in certain transactions,⁴³ disclosure of credit terms in margin transactions,⁴⁴ a description of the margin requirements that determine the amount of collateral customers are expected to

present broker-dealer conflicts of interest. See Exchange Act Release No. 78309 (Nov. 2, 2018) [83 FR 58338, 58373-6 (Nov. 19, 2018)].

⁴² Rule 17a-5 has two main elements: (1) a requirement that broker-dealers file periodic unaudited reports about their financial and operational condition using the FOCUS Report form; and (2) a requirement that broker-dealers annually file financial statements and certain reports, as well as reports covering those statements and reports prepared by an independent public accountant registered with the Public Company Accounting Oversight Board (“PCAOB”) in accordance with PCAOB standards. 17 CFR 240.17a-5. The objective of Rule 15c3-1 is to require a broker-dealer to maintain sufficient liquid assets to meet all liabilities, including obligations to customers, counterparties, and other creditors and to have adequate additional resources to wind-down its business in an orderly manner without the need for a formal proceeding if the firm fails financially. See 17 CFR 240.15c3-1. Rule 15c3-3 requires a carrying broker-dealer to maintain physical possession or control over customers’ fully paid and excess margin securities. The rule also requires a carrying broker-dealer to maintain a reserve of funds or qualified securities in an account at a bank that is at least equal in value to the net cash owed to customers. 17 CFR 240.15c3-3.

⁴³ See 17 CFR 240.15c2-5 (Disclosure and other requirements when extending or arranging credit in certain transactions).

⁴⁴ See 17 CFR 240.10b-16 (Disclosure of credit terms in margin transactions).

maintain in their margin accounts,⁴⁵ and a requirement to issue a margin disclosure statement prior to opening a margin account.⁴⁶

- Communications with the Public Rules. Broker-dealers are subject to a number of rules governing communications with the public, including advertising or marketing communications. These rules apply to broker-dealers' written (including electronic) communications with the public and are subject to obligations pertaining to content, supervision, filing, and recordkeeping.⁴⁷ All communications must be based on principles of fair dealing and good faith, be fair and balanced, and comply with a number

⁴⁵ See FINRA Rule 4210 (Margin Requirements). See also 12 CFR 220.1 et seq. (Federal Reserve Board's Regulation T regulating, among other things, extensions of credit by brokers and dealers);

⁴⁶ See FINRA Rule 2264 (Margin Disclosure Statement). See also FINRA Regulatory Notice 21-15 (FINRA Reminds Members About Options Account Approval, Supervision and Margin Requirements).

⁴⁷ See, e.g., FINRA Rule 2210 (Communications with the Public). FINRA has provided guidance regarding the applicability of the communications rules in the context of social media and digital communications. See FINRA Regulatory Notice 19-31 (Disclosure Innovations in Advertising and Other Communications with the Public); FINRA Regulatory Notice 17-18 (Social Media and Digital Communications); FINRA Regulatory Notice 11-39 (Social Media Websites and the Use of Personal Devices for Business Communications); FINRA Regulatory Notice 10-06 (Social Media Web Sites); see also 17 CFR 240.17a-4(b)(4). Paragraph (b)(4) of Rule 17a-4 requires a broker-dealer to preserve originals of all communications received and copies of all communications sent (and any approvals thereof) by the broker-dealer (including inter-office memoranda and communications) relating to its business as such, including all communications which are subject to the rules of an SRO of which the broker-dealer is a member regarding communications with the public. The term "communications," as used in paragraph (b)(4) of Rule 17a-4, includes all electronic communications (e.g., emails and instant messages). See Recordkeeping and Reporting Requirements for Security-Based Swap Dealers, Major Security-Based Swap Participants, and Broker-Dealers, Exchange Act Release No. 87005 (Sept. 19, 2019) [84 FR 68550, 68563-64 (Dec. 16, 2019)].

of other content standards.⁴⁸ Through its filings review program, FINRA’s Advertising Regulation Department reviews communications submitted either voluntarily or as required by FINRA rules.⁴⁹ In the case of communications relating to options, broker-dealers are subject to certain heightened obligations.⁵⁰

- Supervision Obligations and Insider Trading Procedures. Broker-dealers must “establish and maintain a system to supervise the activities of each associated person that is reasonably designed to achieve compliance with applicable securities laws and regulations, and with applicable FINRA rules.”⁵¹ Among other things, broker-dealers must establish, maintain, and enforce written procedures to supervise the types of business in which they engage and the activities of their associated persons that are reasonably designed to achieve compliance with applicable securities laws and

⁴⁸ Among other requirements and prohibitions, firms may not “make any false, exaggerated, unwarranted, promissory or misleading statement or claim in any communication;” firms “must ensure that statements are clear and not misleading within the context in which they are made, and that they provide balanced treatment of risks and potential benefits;” and firms “must consider the nature of the audience to which the communication will be directed and must provide details and explanations appropriate to the audience.” See FINRA Rule 2210 (Communications with the Public).

⁴⁹ FINRA reviews communications for compliance with applicable regulations. Broker-dealers must submit certain retail communications to FINRA for its approval at least ten business days prior to first use or publication. In addition to reviewing filed communications, broker-dealer communications can also be subject to spot-check reviews by FINRA. See FINRA Rule 2210(c).

⁵⁰ See FINRA Rule 2220 (Options Communications). For example, when making retail communications concerning the sale of options products, broker-dealers must submit certain of those communications to FINRA for its approval at least ten calendar days prior to use.

⁵¹ See FINRA Rule 3110 (Supervision). Under Exchange Act Sections 15(b)(4)(E) and 15(b)(6), the Commission institutes administrative proceedings against broker-dealers and supervisors for failing reasonably to supervise, with a view to preventing violations of the federal securities laws. 15 U.S.C. 78o(b)(4)(E) and 78o(b)(6).

regulations, and with applicable FINRA rules.⁵² Broker-dealers must also establish, maintain, and enforce written policies and procedures reasonably designed to prevent the misuse of material, nonpublic information by the broker-dealer or its associated persons.⁵³

- Recordkeeping Obligations. Section 17(a) of the Exchange Act provides the Commission with authority to issue rules requiring broker-dealers to make and keep for prescribed periods such records as the Commission, by rule, prescribes as necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Exchange Act. Rules 17a-3 and 17a-4 prescribe the primary recordkeeping requirements for broker-dealers.⁵⁴
- Customer Complaints. Broker-dealers are required to have procedures to document and capture, acknowledge, and respond to all written (including electronic) customer complaints,⁵⁵ and report to FINRA certain specified events related to customer complaints, as well as statistical and summary information on customer complaints.⁵⁶

⁵² See FINRA Rule 3110(b)(1).

⁵³ See Exchange Act section 15(g), 15 U.S.C. 78o(g).

⁵⁴ Exchange Act Rule 17a-3 (delineating certain records that broker-dealers must make and keep current, including customer account records, copies of customer confirmations, records of customer complaints, and records related to every recommendation of any securities transaction or investment strategy involving securities made to a retail customer); Exchange Act Rule 17a-4 (specifying the time period and manner in which records made pursuant to Rule 17a-3 must be preserved, and identifying additional records that must be maintained for prescribed time periods.). See 17 CFR 240.17a-3 and 240.17a-4.

⁵⁵ See FINRA Rule 3110(b)(5).

⁵⁶ See FINRA Rule 4530; see also FINRA Rule 4311(g) (addressing certain requirements for carrying agreements relating to customer complaints).

Broker-dealers must also make and keep a record indicating that each customer has been provided with a notice with the address and telephone number to which complaints may be directed.⁵⁷

- Privacy and Cybersecurity. Regulation S-P requires broker-dealers to disclose certain information about their privacy policies and practices, limits the instances in which broker-dealers may disclose nonpublic personal information about consumers to nonaffiliated third parties without first allowing the consumer to opt out, and requires broker-dealers to adopt written policies and procedures that address administrative, technical, and physical safeguards for the protection of customer records and information.⁵⁸ Regulation S-P also limits the re-disclosure and re-use of nonpublic personal information, and it limits the sharing of account number information with nonaffiliated third parties for use in telemarketing, direct mail marketing, and email marketing.⁵⁹ Broker-dealers are also required, under Regulation S-ID, to develop and implement a written identity theft prevention program designed to detect, prevent, and

⁵⁷ See 17 CFR 240.17a-3(a)(18) (requiring broker-dealers to make and maintain a record for each written customer complaint received regarding an associated person, including the disposition of the complaint).

⁵⁸ See 17 CFR 248. Regulation S-P implements the consumer financial privacy provisions, as well as the customer records and information security provisions, of Title V of the Gramm Leach Bliley Act (“GLBA”). It also implements the consumer report information disposal provisions (Section 628) of the Fair Credit Reporting Act (“FCRA”) as amended by the Fair and Accurate Credit Transactions Act of 2003 (“FACT Act”).

⁵⁹ See 17 CFR 248.11 and 248.12.

mitigate identity theft in connection with certain existing accounts or the opening of new accounts.⁶⁰

2. *Existing Investment Adviser Obligations:*

The Investment Advisers Act of 1940 (“Advisers Act”) establishes a federal fiduciary duty for investment advisers, whether or not registered with the Commission, which is made enforceable by the anti-fraud provisions of the Advisers Act. The fiduciary duty is broad and applies to the entire adviser-client relationship, and must be viewed in the context of the agreed-upon scope of that relationship.⁶¹ As a fiduciary, an investment adviser owes its clients a duty of care and a duty of loyalty.⁶² Under its duty of loyalty, an adviser must make full and fair disclosure of all material facts relating to the advisory relationship and must eliminate or make full and fair disclosure of all conflicts of interest which might incline an investment adviser—consciously or unconsciously—to render advice which is not disinterested such that a client can provide informed consent to the conflict. An adviser’s duty of care includes, among other things: (i) a duty to provide investment advice that is in the best interest of the client, based on a

⁶⁰ See 17 CFR 248.201. Regulation S-ID implements the identity theft red flags rules and guidelines provisions (Section 615(e)) of the FCRA as amended by the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (“Dodd-Frank Act”).

⁶¹ For example, to the extent that an adviser provides investment advice to a client through or in connection with a DEP, then all such investment advice must be consistent with the adviser’s fiduciary duty.

⁶² This fiduciary duty “requires an adviser to adopt the principal’s goals, objectives, or ends.” See Commission Interpretation Regarding Standard of Conduct for Investment Advisers, Advisers Act Release No. 5248 (June 5, 2019) [84 FR 33669, 33671 (July 12, 2019)] (“IA Fiduciary Duty Interpretation”) (internal quotations omitted). This means the adviser must, at all times, serve the best interest of its client and not subordinate its client’s interest to its own. See *id.*

reasonable understanding of the client’s objectives;⁶³ (ii) a duty to seek best execution of a client’s transactions where the adviser has the responsibility to select broker-dealers to execute client trades (typically in the case of discretionary accounts); and (iii) a duty to provide advice and monitoring at a frequency that is in the best interest of the client, taking into account the scope of the agreed relationship.⁶⁴ We discussed the fiduciary duty and these aspects of it in greater detail in a Commission interpretation.⁶⁵

Rules adopted under the Advisers Act also impose various obligations on registered investment advisers (or investment advisers required to be registered with the Commission), including:

- Disclosure Requirements. Registered investment advisers are subject to a number of client disclosure obligations, including disclosures before or at the time of entering into an advisory contract, annually thereafter, and when certain changes occur. These disclosures include information about a number of topics, including an adviser’s business practices, fees, conflicts of interest, and disciplinary information, and about advisory employees and their other business activities.⁶⁶
- Reporting Requirements. Investment advisers register with the Commission by filing Form ADV and are required to file periodic updates.⁶⁷ Like all market participants,

⁶³ In order to provide such advice, an investment adviser must have a reasonable understanding of the client’s objectives. See id. at 33672-3.

⁶⁴ See id. at 33669-78.

⁶⁵ See id.

⁶⁶ See, e.g., 17 CFR 275.204-3 (requiring an adviser to deliver a Form ADV Part 2A brochure to advisory clients); 17 CFR 275.204-5 (requiring an adviser to deliver Form CRS to each retail investor).

⁶⁷ See, e.g., 17 CFR 275.204-1.

investment advisers are subject to reporting obligations under the Exchange Act under specified circumstances,⁶⁸ as well as trading rules and restrictions under the Exchange Act.⁶⁹

- Marketing Requirements. Rule 206(4)-1, as amended in December 2020, governs investment advisers' marketing practices.⁷⁰ This rule contains seven general prohibitions on the types of activity that could be false or misleading that apply to all advertisements. The rule also prohibits advertisements that contain testimonials, endorsements, third-party ratings, and performance information, unless certain conditions are met.
- Compliance Programs. Under rule 206(4)-7, an investment adviser must adopt and implement written policies and procedures reasonably designed to prevent violation of the Advisers Act and the rules thereunder by the firm and its supervised persons.⁷¹ Among other things, an adviser's compliance policies and procedures should address portfolio management processes, including allocation of investment opportunities among clients and consistency of portfolios with clients' investment objectives, disclosures by the adviser, and applicable regulatory restrictions. This rule requires review of such

⁶⁸ These include, for example, Schedule 13D or Schedule 13G reporting of "beneficial ownership" of more than 5 percent of shares of a voting class of a security registered under Section 12 of the Exchange Act and Form 13F quarterly reports filed by institutional investment managers that manage more than \$100 million of specified securities. See 17 CFR 240.13d-1(a)-(c) and 240.13f-1.

⁶⁹ These include prohibitions and restrictions on market manipulation and insider trading. See, e.g., 17 CFR 240.10b5-1 and 240.10b5-2.

⁷⁰ The compliance date for amended rule 206(4)-1 under the Advisers Act is November 4, 2022. Until then, advisers that do not comply with amended 206(4)-1 must comply with existing rule 206(4)-1, which governs adviser's advertisements, and rule 206(4)-3, which governs cash payments for client solicitations.

⁷¹ See 17 CFR 275.206(4)-7.

policies and procedures at least annually, and the designation of a chief compliance officer responsible for administering such policies and procedures.

- Supervision Obligations and Insider Trading Procedures. Investment advisers have a duty to reasonably supervise certain persons with respect to activities performed on the adviser's behalf.⁷² In addition, section 204A of the Advisers Act requires investment advisers (registered with the Commission or not) to establish, maintain, and enforce written policies and procedures reasonably designed to prevent the misuse of material, nonpublic information by the investment adviser or any of its associated persons.
- Recordkeeping Requirements. Under rule 204-2, investment advisers must make and keep particular books and records, including certain communications relating to advice given (or proposed to be given), the placing or execution of any order to purchase or sell any security, and copies of the advertisements they disseminate.⁷³
- Privacy and Cybersecurity. Advisers registered or required to be registered with the Commission are also subject to Regulation S-P and Regulation S-ID, which are discussed above in the context of broker-dealers.

Questions: Current regulatory compliance approaches:

- 3.1 How are firms approaching compliance relating to their use of DEPs and the related tools and methods, in order to ensure compliance with their obligations under federal securities laws and regulations, including those identified above? For example, how do firms supervise communications or marketing to retail investors through or in connection with DEPs? Do firms approach compliance relating to the use of DEPs

⁷² See Advisers Act section 203(e)(6), 15 U.S.C. 80b-3(e)(6).

⁷³ See 17 CFR 275.204-2.

- and related tools and methods differently from how they approach compliance relating to other engagement with customers or clients? If so, how do the approaches differ? For example, do such approaches differ based on any unique risks associated with or innate characteristics of DEPs and the related tools and methods?
- 3.2 What types of policies and procedures and controls do firms establish and maintain to ensure the design, development, and use of DEPs and related tools and methods comply with existing obligations? How do firms supervise the design, development, and use of these features, tools, and methods after implementation and adoption for continued compliance? In what ways do firms' policies and procedures, controls, and supervision differ with respect to their use of DEPs and related tools and methods from other policies and procedures, controls, and supervision that the firms employ?
- 3.3 Do firms implement registration or certification requirements for personnel primarily responsible for the design, development, and supervision of DEPs? If so, what are the requirements? What type of training do firms offer to their personnel in connection with the design, development, and use of DEPs and related tools and methods? Do firms outsource the design or development of DEPs? Do firms outsource the design and development of DEPs outside the United States?
- 3.4 What policies, procedures, and controls do firms have in place with respect to the use of DEPs that are designed to promote or that could otherwise direct retail investors to higher-risk products and services, for example, margin services and options trading? What policies, procedures, and controls do firms have in place with respect to the use of DEPs that are designed to promote or that could otherwise direct retail investors to securities or services that are more lucrative for the firm such as: proprietary

- products, products for which the firm receives revenue sharing or other third-party payments, or other higher fee products? To what extent do these policies and procedures consider or address the characteristics of retail investors to whom such products and services may be promoted or directed? For example, do the policies and procedures place controls around how DEPs may be utilized to promote or otherwise direct certain products or services to certain types of retail investors?
- 3.5 What disclosures are firms providing in connection with or specifically addressing DEPs and the related tools and methods (including with respect to any data or information collected from the retail investor)? How are such disclosures presented to retail investors? Does such disclosure address how the use of DEPs or the related tools and methods may affect investors and specifically their trading and investing behavior? Does such disclosure differ from other disclosures that firms provide? How do firms currently disclose information such as risks, fees, costs, conflicts of interest, and standard of conduct to retail investors on their digital platforms? To what extent and how do firms use DEPs to make such disclosures?
- 3.6 Do broker-dealers consider the observable impacts of DEPs when determining if they are making “recommendations” for purposes of Reg BI? How does the fact that a DEP might impact the behavior of a statistically significant number of retail investors affect this determination? What statistical concepts, tools, and quantitative thresholds do broker-dealers use in making this determination?
- 3.7 Are there particular types of DEPs that broker-dealers avoid using because they would be recommendations? If so, which DEPs and why? What are broker-dealers

- doing to ensure that the DEPs they adopt comply with Reg BI and other sales practice rules, where applicable?
- 3.8 Do investment advisers consider the observable impacts of DEPs when determining if they are providing investment advice? How does the fact that a DEP might impact the behavior of a statistically significant number of investors affect this determination? What statistical concepts, tools, and quantitative thresholds do investment advisers use in making this determination?
- 3.9 Are there particular types of DEPs that investment advisers avoid using because they would constitute providing investment advice? If so, which DEPs and why? How do investment advisers satisfy their fiduciary duty when using DEPs and related tools and methods? How do investment advisers take into account their fiduciary duty when designing and developing DEPs?
- 3.10 When providing investment advice or recommendations to a retail investor, do firms adjust that investment advice or recommendation to take into account any data they have about how their DEPs affect investor behavior and investing outcomes? If so, how is such investment advice or recommendation adjusted?
- 3.11 How do firms using DEPs obtain sufficient retail investor information and provide sufficient oversight to satisfy their regulatory obligations, including, for example, applicable anti-fraud provisions and account opening or approval requirements?
- 3.12 How does the recordkeeping process used by firms in connection with DEPs and the related tools and methods compare to the recordkeeping process used in connection with firms' traditional business? Do firms generate and retain records with respect to the development, implementation, modification, and use of DEPs, including the

testing of, or due diligence with respect to, the technology that they use for those purposes? Do firms generate and retain records with respect to retail investor interaction with such DEPs? If so, what types of records?

Questions: Suggestions for modifications to existing regulations or new regulatory approaches to address investor protection concerns, including:

- 3.13 What additions or modifications to existing regulations, including, but not limited to, those identified above, or new regulations or guidance might be warranted to address investor protection concerns identified in connection with the use by broker-dealers and investment advisers of DEPs, the related tools and methods, and the use of retail investor data gathered in connection with DEPs? What types of requirements, limitations, or prohibitions would be most appropriate to address any such identified investor protection concerns?
- 3.14 Are there regulations that currently prevent firms from using DEPs and related tools and methods in ways that might be beneficial to retail investors? If so, what additions or modifications to those regulations would make it easier for firms to use DEPs and related tools and methods to benefit investors? Are there regulatory approaches that would facilitate firms' ability to innovate or test the use of new technology consistent with investor protection?
- 3.15 To the extent commenters recommend any modifications to existing regulations or new regulations, how should DEPs and the scope of tools and methods be defined to capture practices and tools and methods in use today and remain flexible to adapt as technology changes? Should any such modifications or new regulations specifically and uniquely address DEPs or the related tools and methods (i.e., distinct from regulation of interactions with retail investors such as marketing, investment advice,

- and recommendations)? If so, how? Should any such modifications or additional regulations be targeted specifically to address certain types of DEPs or certain tools or methods? If so, how? For example, should specific DEPs be explicitly prohibited or only permitted subject to limitations or other regulatory requirements (e.g., filing or pre-approval)?
- 3.16 Should any such modifications or additional regulations be targeted specifically to address particular risks, such as those related to certain types of securities (e.g., options, leveraged and inverse funds, or other complex securities), services (e.g., margin), or conflicts (e.g., payment and revenue sources)? If so, how? Should any such modifications or additional regulations be targeted specifically to increase protection for certain categories of investors (e.g., seniors or inexperienced investors)? If so, how?
- 3.17 Are there laws, regulations, or other conduct standards that have been adopted in other contexts, fields, or jurisdictions that could serve as a useful model for any potential regulatory approaches?
- 3.18 To the extent commenters recommend any modifications to existing regulations or new regulations, what economic costs and benefits do commenters believe would result from their recommendations? Please provide or identify any relevant data and other information.

III. USE OF TECHNOLOGY BY INVESTMENT ADVISERS TO DEVELOP AND PROVIDE INVESTMENT ADVICE

The Commission is also issuing the Request to assist the Commission and its staff in better understanding the nature of analytical tools and other technology used by investment advisers to develop and provide investment advice to clients, including (1) oversight of this

technology; (2) how investment advisers and clients have benefited from technology; (3) potential risks to investment advisers, clients, and the markets more generally related to this technology; and (4) whether regulatory action may be needed to protect investors while preserving the ability of investors to benefit from investment advisers' use of technology.⁷⁴

A. ISSUES FOR CONSIDERATION

Financial technology enables investment advisers to develop and provide investment advice in new ways or complements existing methods or tools for developing and providing advice,⁷⁵ including by allowing digital platforms to connect clients, their investment advisers, and third-party service providers.⁷⁶ We describe below some recent changes in delivery and development of investment advice and the role of analytical tools and other technology in each. These changes are those that we understand may directly affect clients' receipt of investment advice, and some may overlap depending on an adviser's particular business model and services.

While the increased role of technology has presented investment advisers and clients with benefits, it may also present risks. We recognize that some of these risks may be presented, or be presented differently, for advisers providing traditional investment advice that does not rely

⁷⁴ While we recognize that broker-dealers similarly use analytical tools and other technology for purposes of developing and providing recommendations, those issues are not the focus of Section III of the Request. However, the Commission welcomes comments on these issues relating to broker-dealers as part of the General Request for Comment as set forth in Section IV below.

⁷⁵ The International Organization of Securities Commissions ("IOSCO") has stated that the terms financial technologies or "Fintech" are "used to describe a variety of innovative business models and emerging technologies that have the potential to transform the financial services industry." IOSCO Research Report on Financial Technologies (Fintech) at 4 (Feb. 2017), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD554.pdf>.

⁷⁶ Many investment advisers also increasingly use third-party service providers to generate investment models (e.g., model portfolios) or strategies, and may use software based on, or otherwise incorporating, AI/ML models.

on technology. We understand as well that investment advisers may weigh differently those potential benefits and risks, including those described below, in determining how to use technology in developing and providing investment advice. We therefore are seeking comment to understand better the tools used by investment advisers to develop and provide investment advice and investment advisers' understanding and oversight of these tools and the related benefits and risks. In addition, we seek comment on other ways in which technology has changed investment advisers' development and provision of investment advice to their clients.

1. Robo-Advisers.

Some investment advisers, which we refer to here as robo-advisers, provide asset management services to their clients through online algorithm-based platforms.⁷⁷ The number of robo-advisers (also referred to as digital investment advisers, digital advisers, or automated advisers) has increased over the past several years.⁷⁸ Robo-advisers operate under a variety of business models and have varying degrees of human interaction with clients as compared to traditional advisers, and some rely exclusively on algorithms to oversee and manage individual

⁷⁷ An algorithm can be defined as a routine process or sequence of instructions for analyzing data, solving problems, and performing tasks. See Dilip Krishna et al., Managing Algorithmic Risks: Safeguarding the Use of Complex Algorithms and Machine Learning at 3, Deloitte Development LLC (2017) ("Deloitte Report").

⁷⁸ See, e.g., Investment Adviser Association, 2020 Evolution Revolution at 8 (2020), https://higherlogicdownload.s3.amazonaws.com/INVESTMENTADVISER/aa03843e-7981-46b2-aa49-c572f2ddb7e8/UploadedImages/resources/Evolution_Revolution_2020_v8.pdf (noting that by 2020, "two of the top five advisers as measured by number of non-high net worth individual clients served [were] digital advice platforms, representing 7.5 million clients, an increase of 2.7 million clients from [the prior year]."); Robo-Advisers, IM Guidance Update No. 2017-02 (Feb. 2017), <https://www.sec.gov/investment/im-guidance-2017-02.pdf>.

client accounts.⁷⁹ In some cases, human personnel may have limited ability to override an algorithm, even in stressed market conditions, and there is limited, if any, direct interaction between the client and the adviser's personnel. In other cases, robo-advisers offer hybrid advisory services, which pair algorithm-generated investment options with human personnel who can answer questions, discuss and refine an algorithm-generated investment plan (e.g., clarify information where client questionnaire responses seem conflicting or address risk tolerance levels based on client reaction to stressed market conditions), or provide additional resources to clients. Some robo-advisers offer clients a choice between hybrid and non-hybrid services, at different price points.

In addition to using analytical tools to engage with clients, robo-advisers may use technology (including AI/ML tools) for a variety of other functions. For example, an adviser may use these tools to match clients to individual portfolios based on client inputs or determine how or when to trade for individual client accounts. An adviser also may use these tools to determine asset allocations, determine how to fill allocations, generate trading signals, or make other strategic decisions.⁸⁰

⁷⁹ A robo-adviser or a third party may develop, manage, or own the algorithm used to manage client accounts. In some business models, a robo-adviser may provide its algorithm or its digital platform to another investment adviser. That investment adviser may then (i) use the robo-adviser's existing investment options (e.g., asset allocation models), (ii) use the algorithm or digital platform as a tool to create its own investment options, or (iii) use a combination of these features.

⁸⁰ In addition, FINRA has observed client-facing digital advisers that incorporate trade execution, portfolio rebalancing, and tax-loss harvesting. See FINRA, Report on Digital Investment Advice at 2 (Mar. 2016), <https://www.finra.org/sites/default/files/digital-investment-advice-report.pdf> (describing digital investment tools as tools within two groups: financial professional-facing tools and client-facing tools).

All Commission-registered robo-advisers are subject to all of the requirements of the Advisers Act, including the requirement that they provide advice consistent with the fiduciary duty they owe to clients.⁸¹ Because robo-advisers rely on algorithms, provide advisory services over the internet, and may offer limited, if any, direct human interaction to their clients, they may raise novel issues when seeking to comply with the Advisers Act. For example, advisers may need to consider whether and how automation affects the development of digital advice and the potential risks that such automation may present. An automated algorithm may produce investment advice for a particular client that is inconsistent with the client's investment strategy or relies on incomplete information about the client that depends on limited input data. Increased reliance on automated investment advice may result in too much importance being placed on clients' responses to account opening questionnaires and other forms of automated client evaluation, which may not permit nuanced answers or determine when additional clarification or information could be necessary. This reliance may also result in a failure to detect changes in clients' circumstances that may warrant a change in investment strategy.

Robo-advisers also must determine how to effectively understand and oversee use of their algorithms (including those developed by third parties) and the construction of client portfolios, including any potential conflicts of interest. For example, robo-advisers' algorithms may result in clients being invested in assets in which the adviser or its affiliate holds interests or advises separately (e.g., mutual funds and exchange-traded funds). In these circumstances, the adviser would have a conflict of interest that it must eliminate or fully and fairly disclose such that the client can provide informed consent. In addition, any override or material changes to the

⁸¹ See IA Fiduciary Duty Interpretation, supra note 62, at n.27.

algorithm must result in investment advice that is consistent with the adviser's disclosures and fiduciary duty.

2. *Internet Investment Advisers.*

Some investment advisers may solely use an interactive website to provide investment advice. These investment advisers, otherwise known as “internet investment advisers,” are eligible for SEC registration even if they do not meet the assets-under-management threshold if they satisfy certain criteria, including that they provide advice to all of their clients exclusively through their interactive website (“internet clients”), subject to a *de minimis* exception for other clients.⁸² The Commission has stated that the internet investment adviser exemption was designed to balance the burdens of multiple state registration requirements for internet investment advisers with the Advisers Act's allocation of responsibility for regulating smaller advisers to state securities authorities.⁸³

⁸² See 17 CFR 275.203A-2(e) (permitting Commission registration by an investment adviser that (i) provides investment advice to all of its clients exclusively through an interactive website, except that the investment adviser may provide investment advice to fewer than 15 clients through other means during the preceding twelve months; (ii) maintains specified records; and (iii) does not control, is not controlled by, and is not under common control with, another adviser that registers with the Commission solely because of its relationship with the internet investment adviser). Internet investment advisers represented only 1.5 percent of registered advisers in 2021, but have more than tripled in number since 2010—from 57 in 2010 (approximately 0.5 percent of total registered investment advisers) to 203 in 2021 (approximately 1.5 percent of total registered investment advisers). Data from Form ADV, Part 1A, Item 2.A.(11) (based on Form ADV filings through July 2021).

⁸³ See Exemption For Certain Investment Advisers Operating through the Internet, Advisers Act Release No. 2091 (Dec. 12, 2002) [67 FR 77620, 77621 (Dec. 18, 2002)] (“Internet Investment Adviser Adopting Release”) (“Because an Internet Investment Adviser uses an interactive Web site to provide investment advice, the adviser's clients can come from any state, at any time. As a result, Internet Investment Advisers must as a practical matter register in every state. This ensures that the adviser's registrations will be in place when it later obtains the requisite number of clients from any particular state” that requires state registration.).

For purposes of the exemption, “interactive website” means a website in which computer software-based models or applications provide investment advice to clients based on personal information each client supplies through the website. These websites generally require clients to answer questions about personal finances and investment goals, which the adviser’s application or algorithm analyzes to develop investment advice that the website transmits to the client. The Commission has stated that the exemption is not available to investment advisers that merely use websites as marketing tools or use internet tools such as e-mail, chat rooms, bulletin boards, and webcasts or other electronic media in communicating with clients.⁸⁴ In addition, the Commission distinguished the interactive website described in the exemption from “other types of Web sites that aggregate and provide financial information in response to user-provided requests that do not include personal information.”

This exemption is limited in scope. In the Internet Investment Adviser Adopting Release, the Commission stated that internet investment advisers typically are not eligible to register with the Commission because they “do not manage the assets of their Internet clients” and thus do not meet the statutory threshold for registration with the Commission. Further, the Commission stated that, in order to be eligible for registration under this exemption, an investment adviser “may not use its advisory personnel to elaborate or expand upon the investment advice provided by its interactive website, or otherwise provide investment advice to its Internet clients.” The exemption generally requires that the investment adviser “provides investment advice to all of its clients” through its website, which means that the adviser must operate an interactive website

⁸⁴ Id. at n.15 and accompanying text. Effective September 19, 2011, Rule 203A-2(f) was renumbered as Rule 203A-2(e). See Rules Implementing Amendments to the Investment Advisers Act of 1940, Advisers Act Release No. 3221 (June 22, 2011) [76 FR 42950, 42963 (July 19, 2011)].

through which advice is given. That is, the exemption is unavailable to investment advisers lacking such a website.

Despite the limited nature of the exemption, we understand that some investment advisers may seek to rely on it and to register with the Commission without meeting the exemption's terms or intended purpose.⁸⁵ Examinations of investment advisers relying on the exemption have revealed various reasons for non-compliance with the exemption's requirements, including: (i) failure to understand the eligibility requirements; (ii) websites that were not interactive; (iii) businesses that became dormant but did not withdraw their registration; and (iv) client access to advisory personnel who could expand upon the investment advice provided by the adviser's interactive website, or otherwise provide investment advice to clients, such as financial planning.

Some robo-advisers may provide a broader array of advisory services than those provided by internet investment advisers but not be eligible for Commission registration unless they can rely on another exemption or until they have met the statutory assets-under-management threshold.⁸⁶ Prohibiting these investment advisers from registering with the Commission in these circumstances could impose burdens that the internet investment adviser exemption was intended to alleviate. Finally, because the internet investment adviser exemption was established almost twenty years ago, we seek to understand better how investment advisers are relying on it

⁸⁵ The Commission has cancelled the registrations of advisers where the Commission found that those advisers did not meet the terms of the exemption. See, e.g., Order Cancelling Registration Pursuant to Section 203(h) of the Investment Advisers Act of 1940, Advisers Act Release No. 5110 (Feb. 12, 2019).

⁸⁶ Some of these advisers also may be eligible for the "multi-state adviser exemption" under 17 CFR 275.203A-2(d). The multi-state adviser exemption permits an adviser who is required to register as an investment adviser with fifteen or more states to register with the Commission.

and whether we should consider amending the exemption or creating another exemption that reflects investment advisers' current use of technology in providing investment advice.

3. *AI/ML in Developing and Providing Investment Advice.*⁸⁷

Investment advisers may use, or be considering the use of, software or models based on, or otherwise incorporating, AI/ML (including deep learning, supervised learning, unsupervised learning, and reinforcement learning) in developing and providing investment advice, including by supporting human personnel's decision-making.⁸⁸ Investment advisers may use such models or software to devise trading and investment strategies or develop investment advice, including to assess large amounts of data or to provide clients with more customized service.⁸⁹ In addition, investment advisers may use these tools to monitor client accounts or track the performance of specific securities or other investments.⁹⁰

⁸⁷ Investment advisers' use of AI/ML and other technological tools must comply with existing rules and regulations. The Commission is not expressing a view as to the legality or conformity of such practices with the federal securities laws and the rules and regulations thereunder, nor with the rules of self-regulatory organizations.

⁸⁸ Advisers may also use AI as part of their internal operations, including by reviewing and classifying information (e.g., in regulatory filings and fund prospectuses), by assisting with trade matching or custodian reconciliation, for risk measurement (in part through earlier and more accurate estimation of risks) and stress testing purposes, and by facilitating regulatory compliance.

⁸⁹ See, e.g., Treasury RFI, supra note 11, at 16839 (describing potential benefits of financial institutions' use of AI); see also FINRA AI Report, supra note 11 (highlighting three broad areas where broker-dealers are evaluating or using AI: communications with customers, investment processes, and operational functions); FSB AI Report, supra note 11, at 27.

⁹⁰ Advisers may obtain these AI/ML tools in connection with contracting for cloud services. They may use other types of Fintech, as well, such as financial aggregator platforms that allow advisers to access information about clients' financial accounts, which can inform investment advice. Clients may allow such platforms to access information about their investment accounts and performance to enable a more fulsome analysis of their financial resources and investment experience.

Because ML models learn and develop over time, advisory personnel may face challenges in monitoring and tracking them, including reviewing both a model's input to assess whether it is appropriate and its output to assess accuracy or relevance.⁹¹ For example, advisory personnel may lack sufficient knowledge or experience, or rely heavily on limited personnel, to challenge models' results. In addition, there may be systemic risks associated with the use of these technologies, including potential interconnectedness across the financial system and an emerging dependency on certain concentrated infrastructure and widely used models, which could propagate risks across the financial system. Further, different market participants may use technologies of varying or inadequate quality that could prompt investment advisers to provide unsuitable advice to their clients.

4. *Potential Benefits.*

The use of technology in developing and providing investment advice has provided certain benefits to investment advisers and, in turn, their clients. For example, digital advisers and internet investment advisers may offer lower cost advisory services. They also may provide attractive, user-friendly design features that clients appreciate, and may offer advisory services and online access at all hours of the day.⁹² Digital investment advice may be more accessible than human advisory personnel to a wider range of clients, including clients who have greater confidence in digital investment advice; may facilitate access to a wider range of investment

⁹¹ See, e.g., IOSCO, The Use of Artificial Intelligence and Machine Learning by Market Intermediaries and Asset Managers at 11 (June 2020) (consultation report), <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD658.pdf> (“Unlike traditional algorithms, ML algorithms continually learn and develop over time. It is important that they are monitored to ensure that they continue to perform as originally intended.”).

⁹² See, e.g., Coryanne Hicks, What Is a Robo Advisor and When to Use One, U.S. News & World Report (Feb. 18, 2021), <https://money.usnews.com/financial-advisors/articles/what-is-a-robo-advisor-and-when-to-use-one>.

advisers, including through increased competition and a potential for lower fees; and may permit clients to easily access information about their account and investments.⁹³ In addition, digital advisers may be less prone to “behavioral biases, mistakes, and illegal practices” than human personnel.⁹⁴ By using AI-based software and methods, advisers may provide clients more customized advice or advice that benefits from analysis of more information (or types of information) on a more cost-effective basis than could be provided using traditional tools. In addition, investment advisers may use AI/ML to enhance and expand their services, generate investment strategies, and expand access to investment advice.⁹⁵ Clients may benefit from

⁹³ See, e.g., European Securities and Markets Authority (“ESMA”) et al., Joint Committee Discussion Paper on Automation in Financial Advice at 16-17 (Dec. 4, 2015) (“ESMA Discussion Paper”), https://esas-joint-committee.europa.eu/Publications/Discussion%20Paper/20151204_JC_2015_080_discussion_paper_on_Automation_in_Financial_Advice.pdf; see also ESMA et al., Report on Automation in Financial Advice at 8-9 (2016) (“ESMA Report”), [https://esas-joint-committee.europa.eu/Publications/Reports/EBA%20BS%202016%20422%20\(JC%20SC%20CPFI%20Final%20Report%20on%20automated%20advice%20tools\).pdf](https://esas-joint-committee.europa.eu/Publications/Reports/EBA%20BS%202016%20422%20(JC%20SC%20CPFI%20Final%20Report%20on%20automated%20advice%20tools).pdf) (discussing views on the benefits and risks of automated advice from respondents to the ESMA Discussion Paper).

⁹⁴ Söhnke M. Bartram, Jürgen Branke, and Mehrshad Motahari, Artificial Intelligence in Asset Management, CFA Institute Research Foundation Literature Review 25 (2020) (“CFA Literature Review”), <https://www.cfainstitute.org/-/media/documents/book/rf-lit-review/2020/rflr-artificial-intelligence-in-asset-management.ashx>; see also ESMA Discussion Paper, *supra* note 93, at 17 (“A well-developed algorithm may be more consistently accurate than the human brain at complex repeatable regular processes, and in making predictions. Automated advice tools therefore could reduce some elements of behavioural biases, human error, or poor judgement that may exist when advice is provided by a human. A well-developed algorithm could ensure equal and similar advice to all consumers with similar characteristics.”). But see ESMA Report, *supra* note 93, at 9 (stating that several respondents “stated that whether or not automated advice is more consistent and accurate depends on both the underlying logic of the algorithm and the quality and completeness of the information inputted”); text accompanying *infra* note 97.

⁹⁵ See, e.g., World Economic Forum, The New Physics of Financial Services: Understanding How Artificial Intelligence is Transforming the Financial Ecosystem 114-123 (Aug. 2018), http://www3.weforum.org/docs/WEF_New_Physics_of_Financial_Services.pdf.

investment advisers' ability to use this technology to improve trade execution, as well. In addition, AI-based tools may substantially enhance efficiencies in information processing, reducing information asymmetries, and contributing to the efficiency and stability of markets.

5. *Potential Risks.*

At the same time, these developments may pose new or different risks to clients, including risks presented by investment advisers' reliance on technology and any third parties that provide or service such technology. For example, digital advisers may limit clients' access to human personnel, including when clients are considering major life changes such as retirement or when clients have questions that are highly fact-specific. Clients of internet investment advisers may have issues accessing the interactive websites, which can present unique challenges when the website is the sole means for advice delivery. The quality of the investment advice may depend on an algorithm that human personnel may monitor infrequently, incorrectly or face challenges overseeing.⁹⁶ The use of algorithms may be subject to their own risks, including risks related to the input data (such as a mismatch between data used for training the algorithm and the actual input data used during operations), algorithm design (such as flawed assumptions or judgments), and output decisions (such as disregard of underlying assumptions).⁹⁷ Digital advisers may encourage clients to trade more to the extent that the adviser integrates trade execution services, which may benefit the adviser at the expense of the client.⁹⁸ Depending on

⁹⁶ See, e.g., In the Matter of AXA Rosenberg Group LLC et al., Advisers Act Release No. 3149 (Feb. 3, 2011) (settled action); see also In the Matter of Barr M. Rosenberg, Advisers Act Release No. 3285 (Sept. 22, 2011) (settled action) (finding, in part, that an adviser breached his fiduciary duty by directing others to keep quiet about, and delay fixing, a material error in computer code underlying his company's automated model).

⁹⁷ See Deloitte Report, supra note 77, at 4.

⁹⁸ See CFA Literature Review, supra note 94, at 25 ("At the same time, because robo-advisors have trade execution services integrated into them, they often encourage

the quality, recency, and thoroughness of a client’s information incorporated into an algorithm, as well as how broadly client risk tolerances or investment goals are generalized by the algorithm, the use of algorithms may cause some clients to receive investment advice that is less individualized than they reasonably expect. Similarly, clients may face risks when AI/ML models use poor quality, inaccurate, or biased data that produces outputs that are or lead to poor or biased advice. In this respect, biased data may be incorporated unintentionally through use of data sets that include irrelevant or outdated information, including information that exists due to historical practices or outcomes, or through the selection by human personnel of the data or types of data to be incorporated into a particular algorithm.⁹⁹

To the extent that a third party, rather than the investment adviser, develops the analytical tools, the adviser may face challenges in understanding or overseeing those third parties or the technology. For example, there may be challenges in cases where software or a model is based on an approach or technology that is proprietary to the third party or is hosted by a third party, or where the investment adviser’s personnel do not have the knowledge or experience necessary to understand the technology or to challenge its results. These circumstances may exacerbate exposure of investment advisers and their clients to cybersecurity and data privacy risks.

investors to trade more. This increased trading can be both a benefit, in terms of encouraging investors to rebalance positions more often, and a pitfall, because it can lead to excessive trading that benefits robo-advising systems through commissions at the expense of investors.”).

⁹⁹ See FINRA AI Report, supra note 11, at 14; see also Treasury RFI, supra note 11, at 16840 (“Because the AI algorithm is dependent upon the training data, an AI system generally reflects any limitations of that dataset. As a result, as with other systems, AI may perpetuate or even amplify bias or inaccuracies in the training data, or make incorrect predictions if that data set is incomplete or non-representative.”); Jessica Fjeld et al., Principled Artificial Intelligence: Mapping Consensus in Ethical and Rights-based Approaches to Principles for AI 47-49 (Berkman Klein Center for Internet & Society at Harvard University, Research Publication, 2020).

Further, these risks may affect more clients than those posed by investment advisers using traditional methods because of the scale at which investment advisers are able to reach clients through digital platforms.

Clients' ability to understand these and other risks rests on the quality and sufficiency of their investment advisers' disclosures, which may be particularly important to the extent that these developments reflect the use of underlying technology that is complex or otherwise requires technical expertise. Disclosure can put clients in a position to understand the different roles played by technology and advisory personnel in developing the investment advice that clients receive. Investment advisers may face challenges in disclosing sufficiently these types of risks where any such disclosure might be necessarily technical.

There may also be systemic risks associated with widespread use of AI/ML, including deep learning, supervised learning, unsupervised learning, and reinforcement learning, which may affect the maintenance of fair, orderly, and efficient markets. For example, the Financial Stability Board has stated that "applications of AI and machine learning could result in new and unexpected forms of interconnectedness between financial markets, for instance based on the use by various institutions of previously unrelated data sources."¹⁰⁰ In addition, there could be systemic risk to the extent that digital advisers employ models (including models from third-party model providers) that rely on past performance and volatility, which could constitute input data that is inappropriate for the current market. These and other risks may continue to grow as the use of AI continues to increase among investment advisers.

We request comment on all aspects of investment advisers' use of technology, particularly with respect to developing and providing investment advice, and the potential effect

¹⁰⁰ FSB AI Report, supra note 11, at 1.

on investor protection and regulatory compliance. We specifically request comment on the following:

- 4.1 How do investment advisers currently use technology in developing and providing investment advice? What types of technology do advisers use for these purposes? How do investment advisers use technology in any quantitative investment processes that they employ?
- 4.2 Are our descriptions of the potential benefits and risks of investment advisers' use of technology in developing and providing investment advice accurate and comprehensive? If not, what additional benefits or risks to advisory clients are there from such use? What additional benefits or risks does using these types of technology provide to investment advisers? How do investment advisers weigh these benefits and risks in using technology to develop and provide investment advice? Does technology enable investment advisers to develop investment advice in a more cost-effective way and are clients able to receive less expensive advice as a result? Does technology increase access to investment advice for some clients who would otherwise not afford it or mitigate (or have the potential to mitigate) biases in the market that may have prevented access to some clients or prospective clients? Are there risks associated with the quality of services clients ultimately receive? If so, what are they and how do investment advisers address such risks? What factors do advisory clients consider in choosing to engage a robo-adviser rather than a traditional investment adviser? In what ways does investment advice developed or provided by a robo-adviser differ from investment advice developed or provided by a traditional investment adviser?

- 4.3 To the extent investment advisers use technology in developing and providing investment advice, do advisers assess whether the technology or its underlying models are explainable to advisory personnel or to clients? Is the technology or underlying model explainable? To what extent do investment advisers assess whether the results are reproducible? If so, are the results reproducible? To what extent do investment advisers rely on third parties to make these assessments?
- 4.4 How do investment advisers develop, test, deploy, monitor, and oversee the technology they use to develop and provide investment advice? Do investment advisers develop, test, and monitor AI/ML models differently from how they develop, test, and monitor traditional algorithms? How do investment advisers assess the effect on client accounts of any material change to advisers' technology, algorithm, or model prior to implementation? Do investment advisers communicate with clients about such material changes? If so, how?
- 4.5 What, if anything, do investment advisers do to understand how AI/ML models will operate during periods of unusual or volatile market activity or other periods where such models may have less, or less relevant, input data with which to operate? How does the use of these models by investment advisers affect the market more generally? What formal governance mechanisms do investment advisers have in place for oversight of the vendors that create or manage these models?
- 4.6 How do investment advisers disclose the use of algorithms or models to their clients, including the role of advisory personnel or third parties in creating and managing these algorithms or models? Do these disclosures address any effects that such use may have on client outcomes? When investment advice is developed and provided

- through an automated algorithm, how do advisers disclose the use of that automated algorithm? Do investment advisers assess how effective these disclosures are in informing clients about such use? If so, how effective are such disclosures? Please provide any available data to show how effective such disclosures are. What are clients' expectations for investment advice produced by an investment adviser's automated algorithm, and how are those expectations shaped by investment advisers' disclosures?
- 4.7 How do investment advisers account for the use of any poor quality, inaccurate, or biased data that are used by AI/ML models, and how do investment advisers determine the effect of this kind of data on the algorithms' output or seek to reduce the use of this kind of data? To what extent can the use of AI/ML models in developing investment advice perpetuate social biases and disparities? How have commenters seen this in practice with regard to the use of AI/ML models (e.g., through marketing, asset allocation, fees, etc.)? To what extent and how do investment advisers employ controls to identify and mitigate any such biases or disparities? For example, do investment advisers evaluate the output of their models to identify and mitigate biases that would raise investor protection concerns? Do investment advisers utilize human oversight to identify biases that would raise investor protection concerns, in both the initial coding of their models or in the resulting output of those models?
- 4.8 Are there any particular challenges or impediments that investment advisers face in using AI/ML to develop and provide investment advice? If so, what are they and how

- do investment advisers address such challenges or impediments and any risks associated with them?
- 4.9 When relying on AI/ML models to develop investment advice, how do advisers determine whether those models are behaving as expected? How do advisers verify the quality of the assumptions and methodologies incorporated into such models? How frequently do advisers test these models? For example, do advisers test a model each time it is updated? What model risk management steps should advisers undertake? What is advisers' understanding of their responsibility to monitor, test, and verify model outputs? How do advisers' approaches with respect to AI/ML models differ from other models that advisers may use in developing investment advice?
- 4.10 In the context of developing and providing investment advice, what is the objective function of AI/ML models (e.g., revenue generation)? What are the inputs relied on by AI/ML models used in developing and providing investment advice (e.g., visual cues or feedback)? Does the ability to collect individual-specific data impact the effectiveness of the AI/ML model in maximizing its objective functions?
- 4.11 What cybersecurity and data security risks result from investment advisers' use of technology in developing and providing investment advice? How do investment advisers address or otherwise manage those risks and how do investment advisers disclose these risks to clients? Do investment advisers believe that delivering investment advice through email, which may be encrypted, is more secure than delivery through online client portals? Conversely, do investment advisers believe

- that delivery through online client portals is more secure? How do investment advisers address these concerns when clients are using mobile apps?
- 4.12 How do investment advisers generate records to support the investment advice they develop from using these types of technology? What types of records do they produce and how do investment advisers retain them? Does an investment adviser's recordkeeping process differ based on the type of technology it uses? If so, how?
- 4.13 Do investment advisers generate and retain records with respect to the testing of, or due diligence with respect to, the technology that they use in developing and providing investment advice?
- 4.14 To what extent do investment advisers market the types of technology the adviser uses in developing and providing investment advice? To the extent investment advisers market their use of technology, do advisers demonstrate that use to clients? To what extent do prospective and existing clients seek to assess investment advisers' understanding of the technology, or seek to understand the technology for themselves, in determining whether to hire or retain an investment adviser? If prospective or existing clients make such an assessment, how do they do so?
- 4.15 How do investment advisers disclose the types of technology used in developing and providing investment advice? What types of potential risks and conflicts of interest are disclosed? How are fees disclosed? To what extent does investment advisers' use of technology produce conflicts of interest that are similar to those of investment advisers that do not use such technologies? To what extent does investment advisers' use of technology produce conflicts that result from such use?

- 4.16 In what ways do investment advisers assess whether using these types of technology to develop and provide investment advice enables them to satisfy their fiduciary duty to their clients? How do investment advisers assess their ability to satisfy their duty of care and duty of loyalty when using these types of technology? How does an investment adviser determine whether the advice produced by its automated algorithm is in the best interest of a particular client? To what extent and how often do advisory personnel review investment advisers' algorithms to be sure that such advice is in the client's best interest? In conducting such review, to what extent do advisory personnel understand the algorithm, how it was created, and how it operates in practice? How do advisers take into account their fiduciary duty when developing, testing, monitoring, and overseeing these types of technology? To what extent do investment advisers rely on technology vendors or other third parties to provide technical knowledge so that advisers can understand the algorithms and the information or analysis they generate? When relying on such vendors or third parties, how do investment advisers assess whether the investment advisers are able to satisfy their duty of care and duty of loyalty?
- 4.17 What types of policies and procedures do investment advisers maintain with respect to the technologies they use in developing and providing investment advice to clients? For example, do these investment advisers maintain policies and procedures under rule 206(4)-7 of the Advisers Act that are designed to address the technologies that they use or provide to clients? How do investment advisers' policies and procedures address their use of technology and the duties they owe their clients? Do they address how advisers determine how to incorporate information or analysis developed by

these types of technologies into investment advice that satisfies their fiduciary duty?

If so, how? How do investment advisers introduce new technology to their personnel?

- 4.18 What types of operational risks do investment advisers face using digital platforms to interact with clients? How do investment advisers interact with clients when the platform is unavailable—for example, when the adviser has lost internet service or when the platform is undergoing maintenance? What alternative means of communication are available to clients during those times? When issues arise, is the investment adviser responsible to the client for resolving those issues, or does the investment adviser rely on others to resolve the issues or to be responsible to the client? What terms of service do investment advisers put in place with cloud service providers in connection with the potential for loss of service or loss of data? We understand that investment advisers, like other financial services companies, may rely on a small number of cloud service providers.¹⁰¹ What risks does this reliance present to the industry (and advisory clients)?
- 4.19 Under what circumstances do robo-advisers typically override their algorithm, and in what ways? What steps do robo-advisers take to ensure that any override of the algorithm is consistent with the adviser's disclosure and clients' best interest? Do robo-advisers document their determinations to override the algorithm and, if so,

¹⁰¹ See, e.g., Sophia Furber, As 'Big Tech' Dominates Cloud Use for Banks, Regulators May Need to Get Tougher, S&P Global (Aug. 18, 2020), <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/as-big-tech-dominates-cloud-use-for-banks-regulators-may-need-to-get-tougher-59669007>.

- what specifically is documented? What have robo-advisers found to be the outcomes from overriding an algorithm?
- 4.20 When evaluating digital platforms, how do investment advisers weigh the platform's cost and quality of service?
- 4.21 Should the Commission consider amending Form ADV to collect information about the types of technology that advisers use to develop and provide investment advice? If so, what type of technology and why? What information about technology should we consider collecting? Should the Commission require investment advisers to describe their efforts to monitor the outputs of technology upon which they rely? Should the Commission consider another method of collecting this information?
- 4.22 What costs or benefits do investment advisers experience in registering with the Commission under the exemption for internet investment advisers? What costs or benefits do clients of internet investment advisers experience as compared to clients of other investment advisers registered with the Commission? Do commenters believe that the exemption for internet investment advisers should be updated in any way, including to facilitate its use or to modernize it? Are its conditions appropriate? Should we consider changes to, for example, the *de minimis* exception for non-internet clients or the recordkeeping requirement? Should we consider changes to the exemption's definition of "interactive website"? Should the exemption specify what it means to provide investment advice "exclusively" through the interactive website? Would additional guidance on any of the exemption's conditions or definitions be useful?

- 4.23 The Commission has stated that an investment adviser relying on the internet investment adviser exemption “may not use its advisory personnel to elaborate or expand upon the investment advice provided by its interactive Web site, or otherwise provide investment advice to its internet clients.”¹⁰² Should the Commission consider eliminating or modifying this language? Should the Commission consider changes to the exemption that reflect or otherwise address this language? Should the Commission provide additional guidance about the internet investment adviser exemption?
- 4.24 As discussed above, the Commission acknowledged that the internet investment adviser exemption was designed to balance these advisers’ multiple state registration requirements with the Advisers Act’s allocation of responsibility for regulating smaller advisers to state securities authorities. Consistent with this design, are there changes to the exemption that might help to ensure that it encompasses those investment advisers that provide advice through the internet while ensuring that advisers that use the internet only as a marketing tool, for example, remain subject to state registration? Should the Commission consider creating a registration exemption that reflects investment advisers’ current use of technology in providing investment advice in a better way than the internet investment adviser exemption?
- 4.25 To what extent do investment advisers use digital platforms and other analytical tools in connection with wrap fee programs?¹⁰³ For example, do these programs use model

¹⁰² Internet Investment Adviser Adopting Release, supra note 83, at 77621.

¹⁰³ In a wrap fee program, clients generally are charged one fee in exchange for investment advisory services, the execution of transactions, and custody (or safekeeping) as well as other services. An adviser acting as a sponsor to such a program may choose the service

portfolios or portfolio allocation models (whether developed by the investment adviser or by a third party that provides such models to the adviser for its use) to recommend investor allocations?¹⁰⁴ Do wrap fee programs with an online presence allow clients to engage directly with the portfolio manager managing the client's assets or provide access to a wider array of service providers than the client might otherwise have? Are there concerns with respect to these programs for clients with minimal or no trading activity as commissions for trade execution have moved toward zero?¹⁰⁵ Are such concerns different for wrap fee programs sponsored by robo-advisers as compared to those sponsored by traditional investment advisers?

providers, including other investment advisers, and provide clients with access to those services through internet-based platforms that enable clients to engage directly with service providers.

¹⁰⁴ A model portfolio generally consists of a diversified group of assets (often mutual funds or ETFs) designed to achieve a particular expected return with exposure to corresponding risks that are rebalanced over time. See Morningstar, 2020 Model Portfolio Landscape (2020) (noting that, while models can focus on a single asset class, most models combine multiple asset classes). Model portfolios are distinct from portfolio allocation models, which can be educational tools that investors use to obtain a general sense of which asset classes (as opposed to which specific securities) are appropriate for the investor to allocate its assets to (e.g., appropriate balance of equities, fixed income, and other assets given age and other facts and circumstances).

¹⁰⁵ See generally Securities and Exchange Commission, Division of Examinations, Risk Alert: Observations from Examinations of Investment Advisers Managing Client Accounts That Participate in Wrap Fee Programs (July 21, 2021), at 4 (“Infrequent trading in wrap fee accounts was also identified at several examined advisers, raising concerns that clients whose wrap fee accounts are managed by portfolio managers with low trading activity are paying higher total fees and costs than they would in non-wrap fee accounts.”), https://www.sec.gov/files/wrap-fee-programs-risk-alert_0.pdf. The Risk Alert represents the views of the staff of the Division of Examinations. It is not a rule, regulation, or statement of the Commission. The Commission has neither approved nor disapproved its content. The Risk Alert, like all staff statements, has no legal force or effect: it does not alter or amend applicable law, and it creates no new or additional obligations for any person.

- 4.26 To what extent do robo-advisers (as well as other sponsors of investment advisory programs) rely on Rule 3a-4 to determine that they are not sponsoring or otherwise operating investment companies under the Investment Company Act of 1940 (the “Investment Company Act”)?¹⁰⁶ If such sponsors do not rely on the rule, what policies and practices have sponsors adopted to prevent their investment advisory programs from being deemed to be investment companies?
- 4.27 To satisfy the conditions of Rule 3a-4, among other things, a sponsor and personnel of the manager of the client’s account who are knowledgeable about the account and its management must be reasonably available to the client for consultation. The rule does not dictate the manner in which such consultation with clients should occur. How do sponsors and other advisers satisfy this condition? Should we consider amending Rule 3a-4 to address technological developments, such as chatbots and/or other responsive technologies providing novel ways of interacting with clients? Should the Commission address these developments in some other way? Should the Commission provide additional guidance about this condition? If yes, what specifically should this guidance address?

¹⁰⁶ See 17 CFR 270.3a-4. Certain discretionary investment advisory programs may meet the definition of “investment company” under the Investment Company Act, but the Commission has indicated that investment advisory programs that provide each client with individualized treatment and the ability to maintain indicia of ownership of the securities in their accounts are not investment companies. Whether such a program is an investment company is a factual determination and depends on whether the program is an issuer of securities under the Investment Company Act and the Securities Act. Rule 3a-4 under the Investment Company Act provides a non-exclusive safe harbor from the definition of “investment company” to investment advisory programs that are organized and operated in the manner provided in the rule. A note to the rule also states that there is no registration requirement under Section 5 of the Securities Act for programs that rely on the rule, and that the rule is not intended to create any presumption about a program that does not meet the rule’s provisions.

- 4.28 To satisfy the conditions of Rule 3a-4, among other things, each client's account must be managed on the basis of the client's financial situation and investment objectives. Sponsors must obtain information from each client about their financial situation and investment objectives at account opening and must contact each client at least annually thereafter to determine whether there have been any changes in the client's financial situation or investment objectives. The Commission stated that the receipt of individualized advice is "one of the key differences between clients of investment advisers and investors in investment companies."¹⁰⁷ How do sponsors ensure that they have sufficient information about a client's financial situation and investment objectives to provide investment advice that is in the best interest of the client, including advice that is suitable for the client? Given the availability of new technology for developing and providing investment advice, does a sponsor's reliance on Rule 3a-4 heighten the risk of clients receiving unsuitable advice? If so, are there other requirements or conditions that might address this risk?
- 4.29 One of the conditions of Rule 3a-4 is that investment advisory programs relying on the rule be managed in accordance with any reasonable restrictions imposed by the client on the management of the client's account. In addition, the client must have the opportunity to impose reasonable restrictions at the time the account is opened

¹⁰⁷ See Status of Investment Advisory Programs under the Investment Company Act of 1940, Investment Company Act Rel. No. 21260 (July 27, 1995), 60 FR 39574 (Aug. 2, 1995). The Commission also stated that to fulfill its duty to provide only suitable investment advice, "an investment adviser must make a reasonable determination that the investment advice provided is suitable for the client based on the client's financial situation and investment objectives. The adviser's use of a model to manage client accounts would not alter this obligation in any way." See Status of Investment Advisory Programs under the Investment Company Act of 1940, Investment Company Act Rel. No. 22579 (Mar. 24, 1997), 62 FR 15098 (Mar. 31, 1997).

and must be asked at least annually whether the client might wish to impose any reasonable restrictions or reasonably modify existing restrictions. The Commission explained that the ability of a client to impose reasonable restrictions on the management of a client account is a critical difference between a client receiving investment advisory services and an investor in an investment company. Since the rule was adopted, enhanced technological capabilities and industry practices may have made it practical for sponsors to provide clients with other means of receiving meaningful individualized treatment regarding the management of their accounts. Do sponsors of investment advisory programs currently provide their clients with ways of customizing or personalizing their accounts other than through the imposition of reasonable restrictions? If yes, please provide examples of such practices. To what extent do clients avail themselves of those options for individualized treatment and do they find them to be valuable or important? Should we consider amending Rule 3a-4 to address these developments or should we address them in some other way, such as by providing additional guidance about this condition?

- 4.30 In view of the variety and increasing availability of technologies used by investment advisers to develop and provide investment advice, are there other regulatory matters that the Commission should consider? If so, what are they, and why? To the extent commenters recommend any modifications to existing regulations or additional regulations, what economic costs and benefits do commenters believe would result from their recommendations? Please provide or identify any relevant data and other information.

IV. GENERAL REQUEST FOR COMMENT

This Request is not intended to limit the scope of comments, views, issues, or approaches to be considered. In addition to broker-dealers, investment advisers and investors, we welcome comment from other interested parties, researchers and particularly welcome statistical, empirical, and other data from commenters that may support their views or support or refute the views or issues raised by other commenters.

By the Commission.

Dated: August 27, 2021.

Vanessa A. Countryman,

Secretary.

Appendix A

Tell Us about Your Experiences with Online Trading and Investment Platforms

We're asking individual investors like you what you think about online trading or investment platforms such as websites and mobile applications ("apps"). It's important to us at the SEC to hear from investors who trade and invest this way so we can understand your experiences.

Please take a few minutes to answer any or all of these questions. Please provide your comments on or before October 1, 2021 - and thank you for your feedback!

1. Do you have one or more online trading or investment accounts?

- ☐ Yes, I have one or more accounts that I access online using a computer.
- ☐ Yes, I have one or more accounts that I access using a mobile app.
- ☐ Yes, I have one or more accounts that I access both online using a computer and using a mobile app.
- ☐ Yes, I have one or more accounts that I access online, either using a computer or a mobile app, but I also access the account(s) in other ways (e.g., by calling or visiting in person).
- ☐ I have one or more accounts, but I do not access them online using a computer or using a mobile app.
- ☐ No, I don't have a trading or investment account.

2. If your response to Question 1 is "Yes", do you think you would trade or invest if you could not do so online using a computer or using a mobile app?

- ☐ Yes
- ☐ No

3. On average, how often do you access your online account?

- ☐ Daily/more than once a day
- ☐ Once to a few times a week
- ☐ Once to a few times per month
- ☐ Less often than once a month
- ☐ Never
- ☐ Other

If Other, Explain:

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4. On average, how often are trades made in your online account, whether by you or someone else?

- ☐ Daily/more than once a day
- ☐ Once to a few times a week
- ☐ Once to a few times per month
- ☐ Less often than once a month
- ☐ Never
- ☐ Other

If Other, Explain:

5. If you access your account online, did you have the account first, and only began to access it electronically later? Or did you open the account with the idea that you would access it electronically immediately?

- ☐ I had a pre-existing account and downloaded an app or visited a website to access my account.
- ☐ I downloaded an app or visited a website first, and then opened up an account with the company.

6. My goals for trading or investing in my online account are (check all that apply):

- ☐ Keep the amount of money I have, while keeping up with inflation
- ☐ Save and grow my money for short-term goals (in the next year or two)
- ☐ Save and grow my money for medium- to long-term goals
- ☐ Have fun
- ☐ Other

If Other, Explain:

7. What would you like us to know about your experience with the features of your online trading or investment platform? (Examples of features are: social networking tools; games, streaks, or contests with prizes; points, badges, and leaderboards; notifications; celebrations for trading; visual cues, like changing colors; ideas presented at order placement or other curated lists or features; subscription and membership tiers; or chatbots.)

8. If you were trading or investing prior to using an online account, how have your investing and trading behaviors changed since you started using your online account? (For example, the amount of money you have invested, your interest in learning about investing and saving for retirement, the amount of time you have spent trading, your knowledge of financial products, the number of trades you have made, the amount of money you have made in trading, your knowledge of the markets, the number of different types of financial products you have traded, or your use of margin.)

9. How much experience do you have trading or investing in the following products (None, Less than 12 months, 1-2 years, 2-5 years, 5+ years):

Investment Products	None	Less than 12 Months	1-2 Years	2-5 Years	5+ Years
Stocks	☐	☐	☐	☐	☐
Bonds	☐	☐	☐	☐	☐
Options	☐	☐	☐	☐	☐
Mutual Funds	☐	☐	☐	☐	☐
ETFs	☐	☐	☐	☐	☐
Futures	☐	☐	☐	☐	☐
Cryptocurrencies	☐	☐	☐	☐	☐
Commodities	☐	☐	☐	☐	☐
Closed-End Funds	☐	☐	☐	☐	☐
Money Market Funds	☐	☐	☐	☐	☐
Variable Insurance Products	☐	☐	☐	☐	☐
Business Development Companies	☐	☐	☐	☐	☐
Unit Investment Trusts	☐	☐	☐	☐	☐

10. What is your understanding, if any, of the circumstances under which trading or investing in your account can be suspended or restricted?

11. What else would you like us to know – positive or negative - about your experience with online trading and investing?

Other Ways to Submit Your Feedback

You also can send us feedback in the following ways (include the file number S7-10-21 in your response):
Print Your Responses and Mail Secretary Securities and Exchange Commission 100 F Street, NE Washington, DC 20549-1090
Print a PDF of Your Responses and Email Use the printer-friendly page and select a PDF printer to create a file you can email to: rule-comments@sec.gov
Print a Blank Copy of this Flyer, Fill it Out, and Mail Secretary Securities and Exchange Commission 100 F Street, NE Washington, DC 20549-1090

Contact Info (Not required; to submit anonymously, leave blank)

First Name: _____ Last Name: _____

We will post your feedback on our website. Your submission will be posted without change; we do not redact or edit personal identifying information from submissions. You should only make submissions that you wish to make available publicly.

If you are interested in more information on the proposal, or want to provide feedback on additional questions, [click here](#). Comments should be received on or before October 1, 2021.

Thank you!