Supporting Retail Investors with AI Enhanced Disclosure

By Samuel Keltner[*]

INTRODUCTION

Securities disclosure documents have become significantly more complex as issuers seek to limit their litigation risk[1] and regulators require issuers to disclose more information.[2] The length of a prospectus has ballooned to an average of 184 pages.[3] From the perspective of many retail investors, examining a prospectus has become a significant challenge, and for some, a prohibitive one.[4]

To combat the effects of this deluge of information, two strategies have been advanced. Certain commentators support requiring issuers to include a summary page with disclosures.[5] Others have argued that retail investors' needs are best served by not focusing on them,[6] but rather focusing upon market professionals who are best positioned to protect retail investors by having both the expertise and information necessary to establish an efficient market for securities.[7]

The ever-increasing length of disclosure documents coincides with the recent rise of ChatGPT and AI based search technologies. AI today is capable not only of more efficient searches but also of presenting the information in a narrative format. Yet, the Securities and Exchange Commission (SEC or Commission) and commentators have not addressed how this new technology could help the disclosure length problem. This Article argues in favor of supporting the needs of retail investors and shows how AI is the best tool to address those needs in the current disclosure system and in a theoretical "pure information" environment where the issuer only provides raw data to the market.

The argument proceeds in the following manner. In Part I, the Article outlines key concepts in the securities disclosure regime as well as the technology underlying AI. Part II undertakes a survey of current thinking, exploring both the policies of requiring a summary disclosure document and completely upturning the current approach using "pure information." Part III provides a defense of the retail investor and shows how AI could not only enhance current disclosures on EDGAR but also become a key feature in a "pure information" disclosure environment. This part

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also addresses the practical implications of bringing about and regulating such an AI. Finally, in Part IV, the Article explores the implications of a focus upon the retail investor and the problems inherent with deploying an AI system.

I. SECURITIES DISCLOSURES AND AI, OH-MY

A. THE DISCLOSURE FRAMEWORK

If there is one word that encapsulates the philosophy and drives the policy of the US securities laws, it is "disclosure."[8] This philosophy calls for the Commission to ensure "the quality and quantity of information that corporations made publicly available."[9] Under this system, investors get to make their own decisions about the investment and the government does not make any claim as to whether the investment is "fair, just, [or] equitable."[10]

This philosophy, while simple in theory, runs into difficulty when put into practice. There are questions about what[11] information should be disclosed and the method of the disclosure.[12] The Commission's answer to each of these questions can be found in Regulation S-K,[13] the plain English requirement, file type requirements, and incorporation by reference.[14]

1. Regulation S-K and Reporting Requirements

The disclosure regime created by the Securities Act of 1933 ('33 Act or Securities Act) and the Securities Exchange Act of 1934 ('34 Act or Exchange Act), and perhaps its core feature,[15] is outlined in Regulation S-K.[16] Regulation S-K (along with Regulation S-X for accounting items) "act[s] as the principal source[] for determining the disclosures required to be made."[17] By establishing a series of items that can be easily referenced in the respective disclosure documents, the Commission has created a "central repository" of disclosure requirements.[18] For example, Item 101 calls for a "Description of Business," Item 303 "Management's Discussion and Analysis of Financial Condition and Results of Operations," and Item 503 "Prospectus Summary."[19]

The primary disclosure documents—S-1, S-3, 10-K, and 10-Q—illustrate the modular, uniform approach. Each of these forms reference disclosure items articulated in Regulation S-K.[20] Issuers file Forms S-1 and S-3 registration statements when an issuer makes a new security offering. Form S-1 is the default registration statement[21] often used by new or inexperienced issuers and has less disclosure burden than the S-3.[22] More seasoned issuers use the Form S-3.[23] The disclosure in this document is more extensive because it contains information related to material changes since the last regular report.[24] Form 10-K and 10-Q are the periodic reports required under the Exchange Act.[25] In a

year, a company must file one 10-K, three 10-Q's, any proxy statements, as well as annual shareholder reports. For the average investor, the burden of thoroughly reviewing these filings is substantial.[26]

2. Plain English, Incorporation by Reference, and File Type

In addition to regulating what must be disclosed, the SEC has also promulgated regulations regarding how the information may be disclosed. These regulations include: the plain English requirement,[27] incorporation by reference,[28] and regulations regarding the file in which disclosure is contained.[29] First, the plain English requirement requires "issuers to write the cover pages, summary, and risk factors portions of *prospectuses*" in easy to read English.[30] Actually, the Commission encourages, but does not require outside of the prospectus, all documents filed to be written in "clear, concise, and understandable" plain English.[31] Substantively, these requirements include: "[s]hort sentences; [d]efinite, concrete, everyday language; [a]ctive voice; [t]abular presentation . . .; [n]o legal jargon; and [n]o multiple negatives."[32] The plain English requirement arose out of a fear that disclosure documents were too complicated to be effectively used by individual investors.[33]

Incorporation by reference allows issuers to reference prior documents filed with the Commission that address an item required by a current document. The Commission adopted this approach based on the efficient market theory;[34] however, when it was first adopted it was limited to companies that traded in an efficient market—namely companies with an appropriate public float or annual trading volume.[35] Today, thanks to lower thresholds regarding public float and annual trading volume, incorporation by reference is rampant in both registration statements and periodic reports.[36] Importantly, while this doctrine makes it easier for issuers to complete registration statement forms and incorporate information into their periodic reports, it makes it difficult for retail investors to follow the trail to find the information. Moreover, it makes it difficult for computers to read the information as well.[37]

Along with these substantive policies, the Commission has also addressed technical issues regarding computer files. Due to technical restrains of the HTML format and the intentional narrative-based disclosure design, data analytic efforts required the manual retrieval of information.[38] In response, the SEC promulgated a rule to require issuers to also prepare certain documents, including all the previous forms discussed in machine friendly XBRL format.[39] The XBRL file allows computers to easily

and automatically extract "financial statement data, footnotes, and other key information" because each of these elements is "tagged using definitions from a common taxonomy of reporting elements."[40] In addition to efforts making these reports easier for machines to read, the Commission also requires companies to include their filings on their website and on the SEC's database EDGAR.[41] Together, and as will be discussed in Part III, this framework serves the SEC's goal of "ensuring that all investors and market participants can access the information necessary to make informed financial decisions."[42]

Despite these requirements, investors find these disclosure documents long and difficult reads.[43] Thanks, in part, to incompatible disclosure design and increased shareholder litigation, disclosure documents are now excessively lengthy.[44] Risk factor sections run long and address risk factors that have very little bearing on the business. Management Discussion & Analysis sections also tend to be over-inclusive in attempts to avoid litigation that alleges the omission of material information.[45] However, these practices continue as a way to hedge against the risk of litigation.[46] While securities litigation reform has received widespread coverage,[47] there is a paucity in reforms aimed at the design of the disclosure system itself. This Article aims to fill this gap.

B. Artificial Intelligence

Depending on who you ask, AI will propel mankind into the future or put everyone out of a job.[48] While this Article declines to enter that discussion here, it is important to understand how AI works, its risks and limitations, and how market participants already leverage the technology.

1. Understanding the Technology

AI covers a broad series of technology and designs, "ranging from 'if-then' rule-based expert systems to natural language processing, to the marriage of algorithms and statistics known as machine learning."[49] Each of these types of technologies has varying impacts on the "applicability, relevance, and relative usefulness of legal rules" and should not be confused as the same thing.[50] Recently, machine learning[51] emerged as the most promising and innovative AI technology.[52] Machine learning broadly means "computer algorithms that have the ability to 'learn' or improve in performance over time on some task."[53] As opposed to a programmer outlining a set of if-then parameters, machine learning takes the opposite approach.[54] Instead, the algorithm starts with a "data set and then attempts to derive rules on its own."[55] Programmers can deploy two machine learning methods depending on their goals. In an unsupervised learning model, the

algorithm searches for patterns on its own and helps with exploratory data analysis.[56] In a supervised learning model, the algorithm works on a preselected set of data and tailors the results to achieve the programmer's desired outcome.[57]

These technologies have ideal environments in which they can operate and this can be traced to the factors that have empowered its growth. The rapid evolution of AI has been empowered by data, storage, communication, computing power, and analytics.[58] All of these factors generally rely on static, predictable patterns. Because of this and the technology's current[59] inability to mimic human cognition, AI best operates in situations with easily drawn categories and plentiful numeric indicators. Thankfully for AI, finance and capital markets are filled with such categories and raw numeric data.[60] Today, programs like ChatGPT leverage machine learning technology to take data and provide a comprehensive, narrative answer or prediction to almost any question a user may have.[61]

2. Risks and Limitations of AI

While AI is able to quickly and astutely analyze massive data sets, it also has drawbacks, including data dependency, the black box (the state at which the computational processes of the AI are too complicated for humans to understand how it arrived at the output), cybersecurity, and privacy risks.[62] First, AI, and particularly machine learning, depends on the quality of the training data.[63] This introduces a whole set of problems because humans determine this data.[64] Thus the quality of the machine learning algorithm depends on the sophistication and knowledge of the programmer.[65] Aside from the quality of the data, risks also exist related to herd behavior and reliance on historical data.[66] For example, a group of AI systems recognizing the same trend at the same time can lead to a dramatic market collapse.[67] Further, an AI's outputs may be "inaccurate or improper because the prior data is inapplicable to future-looking predictions."[68] These systems can only rely on current and historical data to make predictions and AI are only as good as the data they train on.[69]

The next risk AI poses is related to the "black box," which refers to "the risk that AI results in processes and operations unknown to and uncontrolled by human beings."[70] This risk poses both financial and legal problems. If the user or programmer is unable to check the algorithm's work, the financial analysis may be flawed.[71] Legally, the black box raises the question of who is accountable for the AI's actions.[72] As will be discussed further below, the Commission has recently adopted a rule proposal aimed at eliminating conflicts of interests in algorithms used by broker-dealers and investment advisors.[73] Chair Gensler has expressed

fear over the power of the algorithm to push retail investors into certain investments.[74] The rule proposal is similar to the commonly proposed solution known as putting "a human in the loop" or place a step in the algorithmic process requiring a person to approve the calculation or process so that there is either accountability for and correction of bad or unwanted outputs.[75]

Finally, AI represents a prime target for bad actors in cyberspace.[76] In 2019, IBM found that "the finance and insurance industry was the most attacked industry in terms of cybersecurity threats."[77] These threats may come from external sources (hackers and state actors) or internal sources (rogue employees or corporate spies).[78] Recently, hackers injected false data into EDGAR and hacked social media accounts to manipulate the trading algorithms.[79] There are also privacy concerns about the data an AI would be able to gather from retail investors. Everything ranging from what investors are searching, what information they view, and how long they spend reading the summarized disclosure could be collected, analyzed, and sold.

3. Current AI Use in the Financial Markets

There are limitless potential uses of AI.[80] In financial firms, there are a few key areas where machine learning has an obvious application. Firms deploy machine learning to assess credit risk, to protect against fraud and wrongdoing, and to devise better trading strategies.[81] In 2016, fraud accounted for $16 billion in losses, and firms are eager to leverage AI to detect fraud earlier.[82] Quantitative hedge funds deploy AI to make investment decisions and private equity firms deploy AI to spot trends in financial data.[83] One firm even launched an ETF based on AI decision making.[84] Firms like JPMorgan are already developing ChatGPT like services to give investors financial advice.[85] One firm has even registered an AI as a financial advisor with the SEC.[86] Despite these advances, issuers and the Commission have yet to embrace AI improvements to the disclosure framework.

II. UNDERSTANDING CURRENT THINKING

This part addresses the questions of who is actually reading the disclosure document as well as what commentators have to say about the Commission's current approach. The Commission's disclosure policies appear to have conflicting aims. Some commentators argue that disclosures run too long and the Commission should require a summary page for the benefit of retail investors, i.e., non-professionals who trade securities.[87] Contrary to this view, others suggest that disclosure documents should be geared toward market professionals or those with financial acumen and resources to invest on a large scale.[88]

A. Who is Reading the Documents

When Congress enacted the current securities laws, it clearly

had investor protection in mind.[89] Future Speaker Sam Rayburn's comments speak to this purpose. Congress sought "to make available to the prospective purchaser, *if he is wise enough to use it*, all information that is pertinent that would put him on notice and on guard, and then let him beware."[90] Along with this fair warning concern, Congress also sought to discourage fraudulent schemes, encourage investors to re-enter the market following the Great Depression, and reduce asymmetries between the investors and company managers.[91] As Professor Korsmo writes, "three and a half" of the four concerns listed deal with unsophisticated, ordinary investors.[92]

While Congress may have been concerned with retail investors as a matter of policy, it remains unclear whether retail investors can even make sense of the information provided to them. In a 2019 FINRA report, the authors found that only 30% of the general population were able to correctly answer questions related to basic financial concepts such as compound interest, inflation, and risk diversification.[93] In a 2012 financial literacy report, the Commission reported that "investors have a weak grasp of elementary financial concepts and lack critical knowledge of ways to avoid investment fraud."[94] The Commission also concluded that certain subgroups, "including women, African-Americans, Hispanics, the oldest segment of the elderly population, and those who are poorly educated" had less financial knowledge than the general population.[95] Moreover, as a matter of practice "ordinary investors do not . . . review the annual, quarterly, and current reports that are incorporated by reference" into registration statements.[96]

The picture is not entirely negative. The majority of new retail investors are Gen Z and Millennials with a median age of 35 years.[97] New retail investors are increasingly more diverse with a make up of 58% White, 17% African American, 15% Hispanic/Latino, and 10% Asian.[98] More women are entering the retail investor pool as 37% of new retail investors are women.[99] Showing initiative, 94% of retail investors want to do their own research and 90% want access to educational materials to improve their investing skills.[100]

The 2012 financial literacy report provides some suggestions geared to helping retail investors.[101] The report suggested that: (1) retail investors generally prefer to receive disclosures before they make a decision, (2) retail investors favor "summary documents containing key information about the investment product," (3) retail investors prefer "clear, concise, understandable language, using bullet points, tables, charts, and/or graphs," and (4) investors favor a "layered approach" or approach where key information is first sent and then upon request a more detailed disclosure is sent.[102]

Regarding what information retail investors like to see before purchase, the report found four major categories: (1) fees/expenses; (2) investment performance; (3) principal risks; and (4) investment objective.[103] The takeaway is that investors only need a few pieces of information in a summary of a disclosure document. The problem is who gets to summarize the information into a neat package. Traditionally, a human would manually go through all the information to provide a summary but, as will be discussed below, AI can now easily perform the task.[104]

B. SEC's Current Approach

Recently, the Commission proposed a rule regarding the use of AI and predictive data analytics (PDA) by broker-dealers and financial advisors.[105] The rule recognizes that AI and PDA can bring benefits in market access, efficiency, and returns but cautions that to the extent these technologies are used to put a firm's interest over an investor's, an investor can suffer harm.[106] The rule applies to broker-dealers and investment advisors who use (1) covered technologies during (2) investor interactions.[107] If these two elements are met, the broker-dealer or investment advisor must (3) comply with the rule by evaluating, determining, and "eliminating or neutralizing conflicts of interest."[108]

As currently proposed, the rule defines covered technology to include any use of "analytical, technological, or computational function, algorithm, model, correlation matrix, or similar method or process that optimizes for, predicts, guides, forecasts, or directs investment-related behaviors or outcomes" for an investor.[109] The broad construction of covered technology have led critics to argue that basic programs like Excel are also covered under the rule.[110] Further, departing from past rulemaking in the space, the rule applies to *all* interactions with investors not just interactions that result in the purchase of sale of securities.[111] Finally, going beyond mere disclosure of conflicts, the rule requires those covered to eliminate or neutralize conflicts, defining conflicts broadly to include favoring information to the firm or any of the firm's associated persons.[112] A conflict is successfully eliminated under the rule when "the interaction no longer places the interests of the firm ahead of the interests of the investors"[113] and successfully neutralized when the algorithm still includes the conflict of interest as a factor but "does not place the firm's or associated person's interest ahead of the investor."[114]

While there is still a long road of comment letters and debate regarding the proposed rule,[115] what the rules makes clear is that the Commission wants to take an active role in protecting investors from the murkiness of the algorithm's output.[116] Effectively, the Commission is requiring firms to place a "human in the loop"

to evaluate the algorithm for conflicts of interests and ensure the outputs do not improperly take them into account. Indeed, the Commission is simply using a technique for AI regulation suggested by scholars for years and applying it in the context of conflicts of interest.[117]

Traditionally, the SEC takes a "balanced" approach to the needs of different classes of investors.[118] As discussed above, the initial policy behind the '33 and '34 Acts favored retail investors. Since then, both SEC policy and court decisions have reinforced this approach. For example, in the *Wheat Report*, the Commission determined that "[a] balance must be struck which reflects, to the extent possible, the needs of all who have a stake in the securities market."[119] Moreover, court decisions from around that time reinforced the idea that disclosure should be geared to "the amateur . . . the professional advisor . . . and [] the securities analyst."[120] Today, this thinking still remains prevalent amongst SEC staff[121] and is evident in the agency's rule making.[122]

However, commentators have criticized this inclusive approach. One group is generally pro-retail investor and blames the risk mitigation regarding future litigation as the root cause of lengthening disclosure documents. Their solution would require issuers to include a summary section with disclosure documents. The other camp dismisses the need for disclosure documents to address retail investors' needs at all. This group argues that disclosures should be geared toward analysts and market professionals because they are best able to analyze the information.

C. Summary Section

A growing number of scholars and practitioners have become concerned with the increasing length of disclosure documents and the inability of retail investors to comprehend them,[123] or to access the information they need as companies seek to limit their liability by including voluminous, boiler-plate information in their bloated documents.[124] This argument has merit. While plain English appears to be best practice in all documents submitted to the SEC, it is not a requirement.[125] Moreover, the focus of the disclosure appears to be geared toward litigation prevention rather than informing investors.[126] Indeed, from 1999 to today, the risk factor section across prospectuses grew on average from 35 to 66 listed factors.[127]

Professor Steinberg argues that ordinary investors should have access to "meaningful information regarding the company and other material facts in an understandable and plainly written format."[128] James Deeken goes further and actually lays out the required information for a prospectus.[129] EU regulators have already laid out requirements for a summary section to accompany

their prospectuses.[130]

D. Pure Information

Others argue that the market best serves retail investors when financial intermediaries and institutional investors have access to the most disclosure. They note that not all investors and market participants have the same financial sophistication or motivations.[131] While the exact categories of investor are disputed, they point out that investor types range from the unsophisticated retail investor to the financially acute securities analyst and large institutional investors.[132] These different types of investors analyze documents with varying levels of sophistication.[133]

The crux of the argument posits that gearing disclosure towards those with more knowledge and resources will create the most efficient market for securities.[134] A securities market is efficient when the "price of [a security] at a given time is the best estimate of what the price will be in the future" because the existing price reflects all available information about the security.[135] Efficient capital markets benefit investors of all types, "because they exhibit accurate prices and enhanced liquidity so that investors can effectively realize their investment preferences by allocating capital accordingly."[136] The efficient market hypothesis is generally accepted by the courts and Commission as a goal of disclosure.[137] If one accepts the efficient market hypothesis, it would seem that the financial professional would be best able to absorb and utilize the information to "largely protect[] ordinary investors from their own ignorance."[138]

Unlike other markets which require disclosure of all material information, the United States currently only requires selective disclosure of items listed in regulation S-K, as required by current reports as well as the information required to be disclosed in special circumstances.[139] Yet still, disclosure documents have grown increasingly longer and filled with meaningless information that makes it not only unapproachable to the retail investors but also unhelpful to the sophisticated investor or institutional analyst.[140] Because sophisticated investors create efficient markets and the current disclosure regime does not disclose information efficiently, this group advocates for reform geared toward providing unfiltered data free of management narration.[141]

This unfiltered data would allow those who can analyze it to "access the true reality" of the issuer.[142] Such information would "enable professional investors to get a clearer picture of the underlying reality" of the company.[143] The data would be processed through AI and/or increasingly more sophisticated financial analytic tools to allow those investors to create an efficient market for the security.[144] The proponents argue that

"regulators need not be concerned, however, that ordinary investors will be blinded by the daylight outside the cave or drowned in the torrent of information" because they will read the summary reports and analysis provided by the investment professionals.[145]

III. Assisting Retail Investors

A. Why the Commission Should Not Abandon Retail Investors

Retail investors should remain the primary focus of disclosure policies, whether those policies mirror the current disclosure regime or are based on "pure information." This argument has three legs: 1) the population of current investors; 2) current public policy considerations; and 3) the legislative history of the Securities Act and Exchange Act.

Retail investors hold approximately 31 percent of publicly traded equity.[146] This significant percentage of retail investors can be attributed to the rise of online brokerage platforms—Robin Hood, E*TRADE, Sofi and others—that have made securities transactions easier and less expensive.[147] Not only are more individuals participating in the market than ever,[148] they are also finding ways to band together to exert their will as a block of shareholders.[149] It has never been easier for non-high net worth individuals to organize and make their interests known to management using platforms such as Reddit and Discord.[150] While recently retail investors banding together resulted in destructive trends such as "meme stocks," the "democratization" of public company ownership cannot be easily handed back to more organized interests now that retail investors have realized they can band together to effectively wield power.[151]

Next, both current SEC and public policy favor supporting retail investors. The SEC's mission is three-part: "to protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation."[152] The investor protection umbrella is meant to cover all investors.[153] Critics argue that the best way to accomplish this mission is to cater disclosure towards those who are best able to digest and analyze all the publicly available information about a company in order to set efficient markets for investors.[154] While professional investors and financial institutions should be provided information necessary to set efficient markets, all investors should have access to the same information presented in a narrative format and the basic means to analyze it.

Public policy goals on both sides of the aisle appear to support providing for the retail investor. For example, the Biden Administration's commitment to equity[155] implicitly supports a

view geared toward supporting the retail investor, especially considering that minorities and the underserved disproportionately lack the training and/or experience that others possess.[156] Republicans, signaling their desire for greater retail investor access, recently proposed to lower the accredited investor requirements to enter the private securities markets.[157] Further still, in a tweet exchange, both Representative Ocasio-Cortez and Senator Cruz recently indicated support for retail investors when Robinhood decided to block retail investor trading during the meme stock craze.[158]

The political agreement arises because greater inclusion of retail investors not only enhances corporate governance but also bridges the gap between corporate power and society.[159] As Professors Ricci and Sautter argue, giving ordinary citizens the power to vote as shareholders grants them a new avenue to hold corporations accountable.[160] Further still, increased access to the stock market "can be a strong saving technology," and promote social cohesion.[161]

Finally, the legislative history of the '33 and '34 Acts reflects an intent to protect primarily retail investors.[162] However, some commentators point out that the financial markets have evolved in numerous ways, including the speed at which the markets absorb information and the sophistication of the participants.[163] Thus, they argue, all are best served by catering to the more sophisticated investors.[164] While this view is consistent with the overarching intent of Congress, it does not account for the fact that Congress sought to protect investors by providing them direct access to the requisite information, thereby allowing individuals to personally interpret that information and make their own decisions.[165] By presenting the required information in confusing financial jargon, a wall of unintelligible data, or through the analysis of a third party, direct access to information is cut off, and retail investors are unable to perform their own analysis, frustrating the original intent of the Acts.

B. How AI Can Help—Benefits

If retail investors are hungry for information,[166] how can the current disclosure framework be modified to be more friendly to both the retail investor and the sophisticated market player? Using the 2012 financial literacy report as a guide, retail investors appear to prioritize the following: (1) disclosures before they make an investment decision, (2) "summary documents containing key information about the investment product" (3) "clear, concise, understandable language, using bullet points, tables, charts, and/or graphs" and (4) a "layered approach" or approach where key information is first sent and then upon request a more detailed

disclosure is sent.[167] Regarding what information retail investors like to see before purchase, the report found four major categories: (1) fees/expenses; (2) investment performance; (3) principal risks; and (4) investment objective.[168]

The current disclosure framework mixes investor friendly and investor hostile regulations.[169] Where the Commission sought to make documents intelligible by requiring most of them to be in plain English, the Commission also made it more difficult for retail investors to find information by allowing issuers to incorporate information from other documents. Further still, the Commission[170] and commentators[171] call for issuers to disclose additional information. Absent from these discussions is any regard for the needs of retail investors so that they can process the information in order to make informed investment decisions. Rather, these discussions focus on the merit of the disclosure item itself and not on how investors will digest the information effectively.

AI could effectively bridge the gap between substantive—efficient disclosure and the needs of retail investors. Currently, issuers upload disclosure documents as PDF's or machine readable XBRL documents[172] onto EDGAR and their website. What happens after that is completely left in the hands of the investor. Programmers could train machine learning enabled AI to effectively scan the language in these documents and provide a tailored summary report to the investor[173] regarding their priorities, typically around fees, risks, and investment objective.[174] Moreover, investors could provide their information preferences and train the AI directly. For example, an ESG minded retail investor could train the AI to include a summary of the environmental disclosure.

AI could also provide the investor with the ability to analyze and compare past disclosures. While today investors have to locate and extract data, a machine learning AI system could be queried regarding company performance in a colloquial question-and-answer format like that utilized by ChatGPT.[175] An AI system could even create charts and graphs that could be analyzed by a retail investor, saving hours of data gathering and reading time.[176]

An AI system allows issuers the principal advantage of lowering both liability and cost. Potential litigants heavily scrutinize the disclosure documents for human error as well as potential fraud.[177] Instead, the onus would be on the AI to be able to analyze the disclosure information given and make sure it is providing an accurate yet succinct summary of the document, thus eliminating the risk of human error.[178] The legal implications of a shift in liability to the programmers or agency responsible for creating the AI will be discussed in the next section.[179]

As discussed above, a pure information model provides an issuer's "raw" data, enabling investors to draw their own conclusions from the information rather than relying on the issuer's interpretation of the data.[180] It is thought that the raw data will enable the true status and prospects of the issuer to be discerned.[181] However, as Professor Hu recognizes, this alternative model relies on "computer and Internet technologies."[182] Indeed, AI is a prerequisite to access the information under this regime because it can quickly and effectively scan data for trends in data and can even be trained to spot new trends.[183] An AI system would be a particularly helpful tool in helping investors analyze raw numbers not presented in a narrative format.[184]

Scholars and commentators have noted the raw data provided in the "pure information" model would allow sophisticated and institutional investors to create an accurate picture of an issuer,[185] and it is these investors who create the most efficient market for all investors.[186]

However, this view overlooks the fact that the "pure information" model removes the issuer's analysis of its own strategic and financial situation,[187] leaving retail investors to rely solely upon the analysis of others unaffiliated with the issuer. Retail investors would likely perceive the shift in access to information and take steps to bridge the information gap between them and more sophisticated investors. An AI system allowing retail investors to analyze financial information stored in a wall of data would be as natural as Gutenberg's printing press enabling the masses to access the knowledge stored in books.

C. Bringing About a Retail Investor Friendly AI

While more sophisticated investors already have access to advanced AI to analyze disclosure statements, the vast majority of retail investors currently lack those means. The development of an AI system geared towards the needs of retail investors here could take different paths. First, programmers could make open-source AI to allow retail investors to analyze the disclosure documents. Second, a business could commercialize an AI to help retail investors analyze the disclosure documents. Finally, a government entity, presumably the SEC, could release its own version of an AI system geared to retail investors.

The first approach would be an open-source AI, which is computer code that anyone can inspect, modify, and enhance.[188] There is already some precedent for open-source code being used to more effectively search EDGAR filings.[189] OpenEDGAR is an open source framework that allows researchers to input precise terms and gather data on trends and other research interests.[190] The designers note the difficulty researchers have in replicating

research based on EDGAR using prior platforms and note that AI can unlock answers for many important research questions.[191]

While OpenEDGAR is not advertised as a platform to be used by investors to make investment decisions and is not particularly friendly to the technologically uninitiated, it represents a proof of concept for retail investor friendly AI geared towards making investment decisions. A significant benefit of an open-source solution is that individual coders can take the code and edit the AI to make it more responsive to certain factors,[192] thus increasing choice for retail investors. However, if coders are making edits to code that ultimately affect an investor's investment decision, does a duty arise to ensure the code is presenting reasoned, unbiased insights?[193]

A person or entity will be deemed an investment adviser, if they meet three requirements: 1) they engage in the business of providing advice regarding the purchase or sale of securities; 2) the advice is provided to another; and 3) that advice is for compensation.[194] The SEC looks to the regularity and frequency of advisory activities when determining if an advisor is engaged in the business of advising, and the compensation element is met if the advisor receives any economic benefit from the person receiving the advice.[195] In an open source AI system, the compensation element would be the hardest to identify since anyone can use the code without cost.[196] Therefore, entities offering opensource AI for a fee would likely be considered an investment advisor and owe duties, while entities that offer it for free would not.

The second path for the development of a retail investor-focused AI system is through private commercialization. In the current disclosure framework, there already exists many services offered to sophisticated investors that speed up disclosure analysis.[197] Many of these platforms are following the rise of AI and incorporating it into their platforms. Given that a commercial product has not risen to popularity among retail investors currently, it is unlikely one will be developed without a change in circumstances.[198] This can largely be attributed to the role brokerages currently play in providing investors research.[199] However, in a pure information disclosure framework, where the issuer only discloses raw data, there may be a stronger incentive for businesses to provide a retail investor friendly model. When people gate-keep any type of useful disclosure, the incentive to access the insights is much stronger. The benefit of a retail investor friendly AI created by a business is that businesses have financial incentive to keep their AI up to date and can meet market demands much more quickly.

Moreover, a business can be regulated and has the resources to

comply with applicable laws. This type of business would meet the definition of an investment advisor and be subject to SEC regulations and fiduciary duties.[200] The drawbacks include a profit incentive for businesses to change the algorithm to favor certain issuers over others. The SEC has recently moved against brokerage platforms for this conduct and the recently proposed rule would address this problem directly, requiring these businesses to eliminate or neutralize any conflicts of interest.[201]

A third and final option for bringing about a retail friendly investor AI would be through one of the government's consumer facing agencies or through the SEC itself. The most obvious candidate is the SEC. The Commission has been, and remains, the primary regulator of investments. Simply, the agency is the disclosure expert and has the technical expertise to create a retail-friendly AI system.[202] A possible obstacle to the Commission creating such an AI is their mandate to not participate in merit regulation,[203] where the government evaluates the investment merits of the offering.[204] By providing an AI that helps investors make investment decisions, it is arguable that the Commission would be providing investors with information based on the merits of the offering.[205]

Proponents of the merit regulation argument would argue that the additional step of performing analysis on the information, either through AI generated narrative disclosure or through the creation of graphs and charts, constitutes an extra step beyond normal disclosure. Many of the same questions the Commission is scrutinizing Broker-Dealers and Investment Advisors over would need to be addressed by the Commission.[206] How would the Commission ensure their AI does not contain a conflict of interest? Who would be responsible for double-checking the outputs? Detractors from the merit regulation would point out that no additional disclosure or tailoring of the advice to the investor is actually taking place. Rather, the AI is simply a search tool to help investors quickly and more efficiently find the information for which they were looking. In this scenario, a well-tailored AI would likely pass scrutiny and be allowed as a function of their disclosure mandate.

It appears beyond debate that EDGAR is in a poor state. Despite an announcement to renovate the platform in the 2000's,[207] there has been little traction on updating it. Given the current state of the disclosure framework, AI could be a welcome replacement of, or supplement to EDGAR searches. In a "pure information" framework, AI would be a necessity to parse the disclosure. Thus, the reservations about the government participating in merit regulation by providing a baseline means to analyze the data would likely be less potent. Also, government agencies are

exempt from regulation as investment advisers. The agency itself would have to determine what framework it will provide to regulate the AI system.[208]

Another candidate, though unlikely, would be the Consumer Financial Protection Board (CFPB). While currently the CFPB does not have authority to regulate those providing advisory financial services regarding securities,[209] developing an investor friendly AI does fit within their mission to insure "consumers are provided with timely and understandable information to make responsible decisions about financial transactions."[210] They also have experience working with AI to protect consumers.[211] It is unlikely that CFPB has the authority to create an AI to help retail investors with securities matters because their jurisdiction excludes institutions under SEC purview. However, with help from Congress, the agency may be the best situated in terms of retail investor knowledge to create such an AI due to their competencies and constituents.[212]

Private enterprise is the most likely source to create an investor friendly AI. Open-source solutions are hampered by the technical expertise needed to get the system operational and are challenged by the dependency upon volunteer programmers needed to keep the system current. Government agencies currently lack the willpower or authority to create an AI system. Thus, the best framework is the one in which private business provides an AI system for investors.

IV. IMPLICATIONS

A. Seeing Retail Investors as Equals

This Article can make no promise that investors will take advantage of the AI tool proposed here. However, as a matter of principle, an AI tool should be provided to make the disclosure accessible to any investor who wishes to make sense of the documents, retail or professional. Further, as the SEC requires issuers to disclose more information, issuers should not count on investors getting lost in the overwhelming amount of disclosure. Finally, in a world where retail investors can band together to exert their will, institutional investors should be more acceding to their informational needs.

The current state of the disclosure regime is not ideal for either retail investors or sophisticated investors. Yet, retail investors own about a third of all publicly issued equity[213] and are entitled to all the same information as a sophisticated investor in the public market. What does it say about the public markets that one group has preferential access to information over another group?[214] At what point do the rights of the minority need to be protected from predations by the majority? Even in the current

state of disclosure where investors tend not to read them, the very principle that they have access to that information is what matters in the context of securities law.[215] The more investors, both in terms of total investment and absolute number, who are able to access and utilize that information in making investments leads to a healthier capital market and society.[216] As Professors Ricci and Sautter argue, by engaging retail investors, corporations benefit because they have more access to their consumers and their views but also benefits society by making the corporations more beholden to the views of the citizenry as opposed to entrenched corporate interests.[217] In effect, retail investors can bridge the gap between corporations and society.[218]

For the disclosure framework to continue to work as intended, investors need the ability to easily navigate disclosure and monitor them over time. For example, the SEC's current efforts to require disclosure of carbon emissions is making headlines.[219] However, no one appears to be concerned about what will happen to the disclosure following its implementation. If these efforts simply result in another line item in Regulation S-K and predictable cookie-cutter 10(b) claims, what practical good was accomplished? Without AI, all investors and especially environmentally conscious investors will have a more difficult time tracking down and analyzing a company's environmental footprint.[220] If the Commission and the public are going to demand that companies disclose more information, an interested party—whether the government, a business, or a consortium of independent programmers—must supply the means for retail investors to efficiently and effectively utilize it.

"Hubris means deadly pride. Thinking you can do things better than anyone else."[221] In the wake of the meme stock episode in 2021, professional investors and talking heads were quick to point out the greed and lunacy in buying large positions in a video game retailer that at the time seemed destined to become the next Blockbuster.[222]

The meme stock craze was and still is driven in part by greed and general lack of financial acumen. However, the solution—to limit retail investors ability to trade—is wrong.[223] First, limiting the ability of investors to access information and even trade goes against both ESG and free market principles.[224] A lack of concern or effort to make a stakeholder group completely reliant on another stakeholder group does not fit with the social pillar of ESG.[225] From a free market perspective, this effort can be seen as the government providing an advantage to one group over the other. The best solution is to provide investors with the tools and skills to help them make better informed decisions.[226] While part of that solution involves teaching retail investors about pump

and dump schemes, it also involves giving them the tools and access to information they desire[227] so that they can make their own assessments. As Speaker Rayburn made clear, it is enough for the information to be provided and it is up to the investor to be "*wise enough to use it.*"[228]

B. Problems Inherent with AI

AI comes with inherent risks and problems including: the black box, concerns about an AI cascade, and privacy concerns. As others have pointed out, AI is dependent on accurate data being provided.[229] Presumably in both the current regime and in a "pure information" environment intentionally, knowingly, or recklessly providing inaccurate data would be actionable under 10(b).[230] So for the purposes of this discussion, the Article limits the risks to threats inherent in using AI.

An important facet to be aware of when considering applying AI to the disclosure regime is the black box problem.[231] The main drawback here would be understanding how the AI decides to promote certain disclosure items over others or how it translates the data into a presentable format. Moreover, there are questions around how the AI would interact with users and learn from their preferences. AI development is a cycle of inputs, computations, and outputs.[232] Not only do the inputs affect the computational outcome but also how the user or programmer adjusts the code.[233] There has been scholarship on how to negate or lessen the effects of this problem, like placing a human in the computational loop.[234] However, regulators, lawmakers, and users may have to be aware and comfortable that there may be some aspects of the AI that they will not understand.

There are also concerns that different AI systems acting in unison could create a financial cascade that wipes out value, such as occurred in the Flash Crash,[235] where an AI system created a massive trade and executed it in about 20 minutes.[236] Other AI programs recognized this trade and quickly made corresponding trades in response.[237] As a result, the Dow experienced a 9.16% drop and billions of dollars of market capitalization was wiped out.[238] This problem could occur with the AI proposed if a substantial group of retail investors contemporaneously executed the same trades based on the same information. However, the confluence of all three of these events is unlikely given that the proposed AI system is to supplement human understanding and not execute trades.

Finally, how would the provider of an AI service fall under the current privacy financial privacy protections?[239] In what ways could the owner of this AI use the information to promote their own business interests? Do retail investors need more privacy

protection in the financial space? These questions and more would need to be addressed by regulators and lawmakers.

CONCLUSION

AI will continue to play an ever-increasing role in society and the markets. The Commission and private actors have the opportunity to apply this technology to make reading and analyzing disclosure documents easier for retail investors. By taking advantage of this opportunity, the market will benefit because a substantial share of retail investors will have better access to information and the pool of retail investors will become more diverse. Further research should explore the Commission's regulation of this sort of AI as well as more specific features the AI could provide. Along a similar vein, if the Commission decides to renovate EDGAR with AI, decision makers need to provide the legal reasoning for why this would not be merit regulation. EDGAR and the Commission risk being caught flat footed as AI search tools like ChatGPT hit the market. The Commission needs to consider AI tools as a way to summarize ever-increasing disclosure requirements and provide all investors access to that information through a system that facilitates its usage.

NOTES:

[1] Deeken, *More is Better?: Concerns on the Growing Amount of Securities Disclosure in Offering Documents and Public Filings*, 50 No. 2 SEC. REGUL. L. J. ART 1, 107 (2022).

[2]Katanga Johnson, *Analysis: Investors Ask U.S. SEC for More ESG Disclosures as Companies Resist*, REUTERS (June 16, 2021), https://www.reuters.com/business/sustainable-business/investors-ask-us-sec-more-esg-disclosures-companies-resist-2021-06-16/.

[3]Deeken, *supra* note 1; *The Rise of the Investor Generation*, CHARLES SCHWAB CORP., https://www.aboutschwab.com/generation-investorstudy-2021 (last visited Sept. 13, 2023) (finding that 94% of retail investors would like to do their own research and 90% wanting education materials to help improve their investing); JILL E. FISCH ET AL., NEW EVIDENCE ON THE FINANCIAL KNOWLEDGE AND CHARACTERISTICS OF INVESTORS 1 (2019), https://gflec.org/wp-content/uploads/2019/10/FINRA_GFLEC_Investor_Financial-Illiteracy_Report_FINAL.pdf (finding that only 30% of the general population demonstrates an understanding of basic financial concepts); *see* Ricci & Sauter, *The Educated Retail Investor: A Response to Regulating Democratized Investing*, 83 OHIO ST. L.J. ONLINE 205, 206–07 (2022) [hereinafter *Educated Retail Investor*].

[4]Deeken, *supra* note 1.

[5]*Id.*

[6]Hu, *Too Complex to Depict? Innovation, Pure Information, and the Sec Disclosure Paradigm*, 90 TEX. L. REV. 1601, 1614 (2012).

[7]*Id.*

[8]*See* JOEL SELIGMAN, THE TRANSFORMATION OF WALL STREET: A HISTORY OF THE SECURITIES AND EXCHANGE COMMISSION AND MODERN CORPORATE FINANCE 39–40 (3d ed. 2003); Hester M. Peirce, Comm'r, Sec. Exch. Comm'n, Through the Looking Glass: Conflicts of Interest Associated with the Use of Predictive Data Analytics by Broker-Dealers and Investment Advisers Proposal (July 26, 2023) [hereinafter Comm'r Peirce's Statement on Conflicts Rule], https://www.sec.gov/news/statement/peirce-statement-predictive-data-analytics-072623 (noting how disclosure is on the Commission's "primary regulatory tools"); James F. Tierney, *The SEC's Data Analytics Rule and the "Netflix Problem" in Securities Regulation* (last revised Aug. 31, 2023) (manuscript at 14), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4524766 (noting how disclosure is a "canonical regulatory tool"); LOUIS D. BRANDEIS, OTHER PEOPLE'S MONEY AND HOW THE BANKERS USE IT 92 (1914) ("Sunlight is said to be the best of disinfectants.").

[9]Hu, *supra* note 6, at 1614; Lin, *Reasonable Investor(s)*, 95 B.U.L. Rev. 461, 479 (2015).

[10]Hu, *supra* note 6, at 1616.

[11]MARC. I. STEINBERG, RETHINKING SECURITIES LAW 40 (2021) (Arguing for a mandatory disclosure framework or the policy that all material information should be disclosed absent justifiable business reasons); Sylvia Lu, *Algorithmic Opacity, Private Accountability, and Corporate Social Disclosure in the Age of Artificial Intelligence*, 23 VAND. J. ENT. & TECH. L. 99, 128 (2020); Enhanced Disclosures by Certain Investment Advisers and Investment Companies About Environmental, Social, and Governance Investment Practices, 87 Fed. Reg. 36654 (proposed June 6, 2022).

[12]Korsmo, *The Audience for Corporate Disclosure*, 102 IOWA L. REV. 1581, 1623 (2017); Lin, *supra* note 9, at 508; Hu, *supra* note 6, at 1633.

[13]15 U.S.C.A. § 77a et seq.; 15 U.S.C.A. § 78a et seq.; 17 C.F.R. § 229 (2023).

[14]17 C.F.R. § 230.421(d)(2) (2023); 17 C.F.R. § 240.12(b)(23) (2023); Securities Act Release No. 6235 (1980) ("It is incumbent upon the Commission to consider the entire community of users of company information . . ."); STAFF OF THE OFFICE OF INV. EDUCATION AND ADVOC. OF THE U.S. SEC. AND EXCH. COMM'N, STUDY REGARDING FINANCIAL LITERACY AMONG INVESTORS iii (2012) [hereinafter Financial Literacy Report]; Scott W. Bauguess, Deputy Chief Economist and Deputy Director, Division of Economic and Risk Analysis, Sec. Exch. Comm'n, SEC Keynote Address: Financial Information Management (FIMA) Conference (May 3, 2018).

[15]Schwartz, *Mandatory Disclosure in Primary Markets*, 2019 UTAH L. REV. 1069, 1078 (2019).

[16]17 C.F.R. § 229 (2023).

[17]STEINBERG, *supra* note 11, at 30.

[18]17 C.F.R. § 229 (2023).

[19]17 C.F.R. §§ 229.101, 229.303, 229.503 (2023).

[20]*See, e.g.*, *Form 10-K*, SEC. EXCH. COMM'N (last accessed, Mar. 28, 2023), https://www.sec.gov/files/form10-k.pdf.

[21]MARC I. STEINBERG, SECURITIES REGULATION 250–54 (8th ed 2022) [hereinafter SECURITIES REGULATION].

[22]*Id.*

[23]*Id.* at 205–08.

[24]*Form S-3*, SEC. EXCH. COMM'N (last accessed Mar. 28, 2023), https://www.sec.gov/files/forms-3.pdf.

[25]15 U.S.C.A. § 77a et seq.; 15 U.S.C.A. § 78a et seq.; *Form 10-K*, *supra* note 20; Form 10-Q, SEC. EXCH. COMM'N (last accessed Mar. 28, 2023), https://www.sec.gov/files/form10-q.pdf.

[26]*How to Read a 10-K/10-Q*, SEC. EXCH. COMM'N (Jan. 25, 2021), https://www.sec.gov/oiea/investor-alerts-and-bulletins/how-read-10-k10-q.

[27]Securities Act Release No. 7497 (1998); Rule 421(d)(2), 17 C.F.R. § 230.421(d)(2) (2023).

[28]Incorporation by Reference, 17 C.F.R. § 240.12b-23 (2023).

[29]Interactive Data File Submissions, 17 C.F.R. § 232.405 (2023); *Inline XBRL*, SEC. EXCH. COMM'N (last modified Feb. 9, 2023), https://www.sec.gov/structureddata/osd-inline-xbrl.html.

[30]SECURITIES REGULATION, *supra* note 21, at 261 (emphasis added); Rule 421(d)(2), 17 C.F.R. § 230.421(d)(2) (2023).

[31]Theo Francis, *To be Clear, SEC Reviewers Want Filing in Plain English, Period,* WALL ST. J. (Sept. 12, 2014, 4:55 P.M.), https://www.wsj.com/articles/to-be-clear-sec-reviewers-want-filings-in-plain-english-period-1410555347; PERKINS COIE, *Chapter 4: Nuts & Bolts: The Basics of Public Company Reporting Obligations* (last accessed Feb. 27, 2023), https://www.perkinscoie.com/en/pch-chapter-4.html.

[32]SECURITIES REGULATION, *supra* note 21, at 261.

[33]*Id.*

[34]Securities Act Release No. 33-6331 (1981); STEINBERG, *supra* note 11, at 26.

[35]Securities Act Release No. 33-6383 (1981); STEINBERG, *supra* note 11, at 36–37.

[36]STEINBERG, *supra* note 11, at 37.

[37]Interactive Data File Submissions, 17 C.F.R. § 232.405 (2023); *Inline XBRL*, SEC. EXCH. COMM'N (last modified Feb. 9, 2023), https://www.sec.gov/structureddata/osd-inline-xbrl.html.

[38]Bauguess, *supra* note 14.

[39]Securities Act Release Nos. 33-9002, 33-10415.

[40]Bauguess, *supra* note 14.

[41]Regulation S-T, 17 C.F.R. § 232.10 et seq. (2023); Regulation S-K Item 101(e), 17 C.F.R. § 229.101(e) (2023).

[42]Bauguess, *supra* note 14.

[43]Deeken, *supra* note 1.

[44]*Id.* at 109.

[45]Management's discussion and analysis of financial condition and results of operations Item 303, 17 C.F.R. § 229.303 (2023).

[46]Deeken, *supra* note 1.

[47]The scholarship in this area focusing on the development of classic securities law cases including, but not limited to, 10b-5 claims including *Basic Inc. v. Levinson*, 485 U.S. 224, 108 S. Ct. 978, 99 L. Ed. 2d 194, Fed. Sec. L. Rep. (CCH) P 93645, 24 Fed. R. Evid. Serv. 961, 10 Fed. R. Serv. 3d 308 (1988) (outlining the concept of materiality under 10(b), among other subjects), *Santa Fe Industries, Inc. v. Green*, 430 U.S. 462, 97 S. Ct. 1292, 51 L. Ed. 2d 480, Fed. Sec. L. Rep. (CCH) P 95914 (1977) (declining to extend 10(b) to reach fiduciary

duties regulated under state law), insider trading including *Chiarella v. U. S.*, 445 U.S. 222, 100 S. Ct. 1108, 63 L. Ed. 2d 348, Fed. Sec. L. Rep. (CCH) P 97309 (1980), and in statutory reform focused laws such as Private Securities Litigation Reform Act of 1995, Pub. L. No. 104-67, 109 Stat. 737 (1969) and Sarbanes-Oxley Act of 2002, Pub. L. No. 445 U.S. 222 (1980), and in statutory reform focused laws such as Private Securities Litigation Reform Act of 1995, Pub. L. No. 104-67, 109 Stat. 737 (1969) and Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745. *See, e.g.*, Steinberg, *supra* note 11, at 163–209; A.C. PRITCHARD & ROBERT B. THOMPSON, A HISTORY OF SECURITIES LAW IN THE SUPREME COURT 128–221 (Oxford Univ. Press 2023).

[48]Charles Simon, *As AI Advances, Will Human Workers Disappear?*, FORBES (Jun. 28, 2022), https://www.forbes.com/sites/forbestechcouncil/2022/06/28/as-ai-advances-will-human-workers-disappear/?sh=302540be5e68.

[49]Buckley et al., *Regulating Artificial Intelligence in Finance: Putting the Human in the Loop*, 43 SYDNEY L. REV. 43, 46 (2021).

[50]Carla L. Reyes, Chapter 1 Artificial Intelligence: An Introduction to the Big Issues 2 (unpublished manuscript) (on file with Carla L. Reyes).

[51]The technology behind ChatGPT.

[52]Magnuson, *Artificial Financial Intelligence*, 10 HARV. BUS. L. REV. 337, 344 (2020).

[53]Reyes, *supra* note 50, at 2.

[54]*Id.*

[55]*Id.*

[56]*What is Machine Learning? How it Works, Why it Matters, and Getting Started*, MATHWORKS (last accessed Mar. 28, 2023), https://www.mathworks.com/discovery/machine-learning.html#:~:text=Tutorials%20and%20examples-,How%20Machine%20Learning%20Works,intrinsic%20structures%20in%20input%20data.

[57]*Id.*

[58]Buckley, *supra* note 49, at 46.

[59]Pavan Vadapalli, *AI vs. Human Intelligence*, UPGRAD, https://www.upgrad.com/blog/ai-vs-human-intelligence/#:~:text=While%20Human%20Intelligence%20aims%20to,analogous%2C%20but%20machines%20are%20digital (Aug. 26, 2022).

[60]Magnuson, *supra* note 52, at 348.

[61]*Introducing ChatGPT*, OPENAI (Nov. 30, 2022), https://openai.com/blog/chatgpt; Molly Ruby, *How ChatGPT Works: The Model Behind the Bot*, MEDIUM (Jan. 30, 2023), https://towardsdatascience.com/how-chatgpt-works-the-models-behind-the-bot-1ce5fca96286.

[62]Fletcher & Le, *The Future of AI Accountability in the Financial Markets*, 24 VAND. J. ENT. & TECH. L. 289, 301 (2022); Buckley, *supra* note 49, at 49; Magnuson, *supra* note 52, at 355.

[63]Buckley, *supra* note 49, at 49–50.

[64]Magnuson, *supra* note 52, at 355.

[65]*Id.*

[66]Gina-Gail, *supra* note 62, at 303.

[67]*Id.* (*see infra* note 235 for a discussion when this occurred during the

Flash Crash).

[68]*Id.*

[69]*Id.*

[70]Buckley, *supra* note 49, at 45.

[71]Coryanne Hicks, *I Pitted ChatGPT Against a Financial Advisor to Help Me Save for Retirement—and the Winner is Clear*, FORTUNE (Aug. 25, 2023), https://fortune.com/recommends/investing/chatgpt-vs-real-financial-advisor-to-plan-retirement-which-is-better/ (finding that ChatGPT incorrectly double calculated inflation costs and the amount needed to save for retirement).

[72]Buckley, *supra* note 49, at 45.

[73]Conflicts of Interest Associated with the Use of Predictive Data Analytics by Broker-Dealers and Investment Advisors, Exc. Act Release No. 34-97990, Investment Advisors Act No. 6353, 88 Fed. Reg. 53,960 (proposed Aug. 9, 2023) [hereinafter Conflicts Proposal].

[74]Gary Gensler, Chairman, Sec. Exch. Comm'n, Statement on Conflicts of Interest Related to Uses of Predictive Data Analytics (July 26, 2023) [hereinafter Chairman Gensler's Comments Regarding Conflicts Rule], https://www.sec.gov/news/statement/gensler-statement-predictive-data-analytics-072623#:~:text=First%2C%20the%20rules%20would%20require,interests%20ahead%20of%20investors'%20interests; Tierney, *supra* note 8, manuscript at 2 ("The algorithm can shape behavior by guiding users toward content they are likely to enjoy, influence how much time they spend on the platform, and subtly nudge them toward certain genres or types of content over time.").

[75]Crootof et al., *Humans in the Loop*, 76 VAND. L. REV. 45–57 (forthcoming 2023) (arguing that humans in the loop occupy a variety of roles including a corrective role, a resilience role, justificatory role, dignitary role, accountability role, stand-in role, friction role, warm body role, or interface role.).

[76]Lin, *Artificial Intelligence, Finance, and the Law*, 88 FORDHAM L. REV. 531, 538–39 (2019) [hereinafter ARTIFICIAL INTELLIGENCE].

[77]*Id.*

[78]*Id.*

[79]*Id.* at 540.

[80]Magnuson, *supra* note 52, at 348.

[81]*Id.* at 350.

[82]*Id.*

[83]*Id.*

[84]*AIEQ AI Powered Equity ETF*, EFTMG (last accessed Mar. 28, 2023), https://etfmg.com/funds/aieq/ (It should be noted that as of 2/21/23 the AI has not successfully beat the market looking at returns.).

[85]Hugh Son, *JPMorgan is Developing a ChatGPT-like A.I. Service that Gives Investment Advice*, CNBC (May 25, 2023, 6:03 PM), https://www.cnbc.com/2023/05/25/jpmorgan-develops-ai-investment-advisor.html.

[86]Breck Dumas, *AI-Powered Investment Platform Becomes First Non-Human Financial Advisor Regulated by SEC*, FOX BUSINESS (Aug. 30, 2023, 7:19 AM), https://www.foxbusiness.com/technology/ai-powered-investment-platform-first-non-human-financial-advisor-regulated-sec.

[87]Steinberg, *supra* note 11, at 39; Deeken, *supra* note 1; Adam Hayes, *Retail*

Investor: Definition, What They Do, and Market Impact, INVESTOPEDIA, https://www.investopedia.com/terms/r/retailinvestor.asp (Feb. 17, 2021).

[88]Korsmo, *supra* note 12, at 1600; Lin, *supra* note 9, at 468–74; Hu, *supra* note 6, at 1610.

[89]Korsmo, *supra* note 12, at 1594.

[90]77 CONG. REC. 2919 (May 5, 1933) (statement of Rep. Rayburn) (emphasis added); Korsmo, *supra* note 12, at 1594; SELIGMAN, *supra* note 8, at 36.

[91]Korsmo, *supra* note 12, at 1594.

[92]*Id.*

[93]FISCH ET AL., *supra* note 3.

[94]Financial Literacy Report, *supra* note 14, at iii.

[95]*Id.*

[96]STEINBERG, *supra* note 11, at 36.

[97]*The Rise of the Investor Generation*, *supra* note 3.

[98]Lush et. al., *Investing 2020: New Accounts and the People Who Opened Them*, FINRA INVESTOR FOUNDATION AND NORC AT THE UNIVERSITY OF CHICAGO (Feb. 2021), https://www.finrafoundation.org/sites/finrafoundation/files/investing-2020-new-accounts-and-the-people-who-opened-them_1_0.pdf (A considerably different makeup compared to the experienced entrants make up of 68% white, 7% African American, 17% Hispanic/Latino, and 9% Asian).

[99]Sarah O'Brien, *86% of Last Year's New Investors Plan to Put Even More Money in Stocks in 2022, Survey Says*, CNBC (Jan. 19, 2022), https://www.cnbc.com/2022/01/19/most-of-last-years-new-investors-plan-to-buy-more-stocks-in-2022.html.

[100]*The Rise of the Investor Generation*, *supra* note 97.

[101]Financial Literacy Report, *supra* note 14, at iii-iv.

[102]*Id.*

[103]*Id.*

[104]*See infra* Part III.

[105]Conflicts Proposal, *supra* note 73.

[106]*Id.* at 7.

[107]*Id.* at 42.

[108]*Id.*

[109]*Id.* at 42–43.

[110]Comm'r Peirce's Statement on Conflicts Rule, *supra* note 8.

[111]Conflicts Proposal, *supra* note 73, at 49–50; *cf.* Regulation Best Interest, 17 C.F.R. § 240.15l-1 (2019) (applying only to interactions where advice is given to the investor); *see* Tierney, *supra* note 8, manuscript at 10.

[112]Conflicts Proposal, *supra* note 73, at 60–112.

[113]*Id.* at 97.

[114]*Id.*

[115]*See, e.g.*, Comm'r Peirce's Statement on Conflicts Rule, *supra* note 8; Chairman Gensler's Comments Regarding Conflicts Rule, *supra* note 74.

[116]Conflicts Proposal, *supra* note 73, at 9–10.

[117]*See infra* Part I.B.2.

[118]Korsmo, *supra* note 12, at 1597.

[119]SEC. & EXCH. COMM'N, DISCLOSURE TO INVESTORS: A REAPPRAISAL OF FEDERAL ADMINISTRATIVE POLICIES UNDER THE '33 AND '34 ACTS 51–52 (1969).

[120]*Feit v. Leasco Data Processing Equipment Corp.*, 332 F. Supp. 544, 564–65, Fed. Sec. L. Rep. (CCH) P 93163 (E.D. N.Y. 1971).

[121]Bauguess, *supra* note 14 ("[T]he SEC is fundamentally committed to ensuring that all investors and market participants can access the information necessary to make informed financial decisions.").

[122]*Compare* Securities Act Release No. 7497 (1998); Rule 421(d)(2), 17 C.F.R. § 230.421(d)(2) (2023) *with* Incorporation by Reference, 17 C.F.R. § 240.12b-23 (2023).

[123]Steinberg, *supra* note 11, at 39; Deeken, *supra* note 1.

[124]Steinberg, *supra* note 11, at 39; Deeken, *supra* note 1.

[125]Steinberg, *supra* note 11, at 40 n.138; *Public Company Handbook Chapter 4: Nuts & Bolts: The Basics of Public Company Periodic Reporting Obligations*, PERKINS COIE (last accessed Mar. 28, 2023), https://www.perkinscoie.com/en/pch-chapter-4.html.

[126]Deeken, *supra* note 1; McClane, *Regulating Substance Through Form: Lessons from the Sec's Plain English Initiative*, 55 HARV. J. ON LEGIS. 265, 302 (2018); James Spindler, *IPO Underpricing, Disclosure, and Litigation Risk* 15–16 (Univ. S. Cal. Law Econ. Working Paper Series, Paper No. 94, 2009), http://law.bepress.com/usclwps-lewps/art94.

[127]Deeken, *supra* note 1.

[128]Steinberg, *supra* note 11, at 40.

[129]Deeken, *supra* note 1 (Listing the following as representative of what should be included: (1) what does the issuer do; (2) how does it make money; (3) who are its major customers; (4) what competitors does it have; (5) does the issuer rely on key suppliers or supplies; (6) are there any risks of litigation; (7) management compensation and potential conflicts of interests.).

[130]Commission Regulation 2017/1129 of June 14, 2017, On the Prospectus to be Published When Securities are Offered to the Public or Admitted to Trading on a Regulated Market, and Repealing Directive 2003/71/EC, 2017 O.J. (L 168), https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1129&from=EN; Sviatoslav Rosov, *Designing A European Summary Prospectus Using Behavioral Insights*, CFA Institute (Mar. 1, 2017), https://www.cfainstitute.org/-/media/documents/article/position-paper/designing-a-european-summary-prospectus.pdf.

[131]Korsmo, *supra* note 12, at 1600; Lin, *supra* note 9, at 468–74; Hu, *supra* note 6, at 1610.

[132]Korsmo, *supra* note 12, at 1600; ARTIFICIAL INTELLIGENCE, *supra* note 76, at 468–74.

[133]ARTIFICIAL INTELLIGENCE, *supra* note 76, at 468–74.

[134]Korsmo, *supra* note 5, at 1600; ARTIFICIAL INTELLIGENCE, *supra* note 76, at 474; Hu, *supra* note 6, at 1617.

[135]*Basic Inc. v. Levinson*, 485 U.S. 224, 108 S. Ct. 978, 99 L. Ed. 2d 194, Fed. Sec. L. Rep. (CCH) P 93645, 24 Fed. R. Evid. Serv. 961, 10 Fed. R. Serv. 3d

308 (1988); Fischel, *Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities*, 38 Bus. Law. 1, 4 (1982); Korsmo, *Mismatch: The Misuse of Market Efficiency in Market Manipulation Class Actions*, 52 WM. & MARY L. REV. 1111, 1126 (2011).

[136]ARTIFICIAL INTELLIGENCE, *supra* note 76, at 477.

[137]Korsmo, *supra* note 12, at 1606–08; Jaime Lizarraga, Comm'r, U.S. Sec. & Exch. Comm'n, Increasing Market Fairness and Efficiency for Investors (Feb. 15, 2023), https://www.sec.gov/news/statement/lizarraga-statement-cycle-021523.

[138]Korsmo, *supra* note 12, at 1612; Elisse B. Walter, Chairman, U.S. Sec. & Exch. Comm'n, Harnessing Tomorrow's Technology for Today's Investors and Markets, Address at the American University School of Law (Feb. 19, 2013), http://www.sec.gov/News/Speech/Detail/Speech/1365171492300; Keith F. Higgins, Dir., Div. of Corp. Fin., U.S. Sec. & Exch. Comm'n, Shaping Company Disclosure: Remarks Before the George A. Leet Business Law Conference (Oct. 3, 2014), https://www.sec.gov/News/Speech/Detail/Speech/1370543104412 (Critics of the current disclosure regime argue that "disclosure for the masses is not the answer. Rather, we ought to make sure that sophisticated securities analysts on both the buy and the sell side have the information that they need to determine whether a company's stock is trading at the right price. *The efficient market hypothesis would then tell us that all investors—retail and institutional—will benefit from those efforts*.") (emphasis added).

[139]SECURITIES REGULATION, *supra* note 21, at 732.

[140]Fanto, *We're All Capitalists Now: The Importance, Nature, Provision and Regulation of Investor Education*, 49 CASE W. RES. L. REV. 105, 170 (1998) ("[Investors] do not read lengthy disclosure documents, no matter how plainly written, and it makes no sense to encourage them to do so."); OFFICE OF INVESTOR EDUC. & ASSISTANCE, SEC. & EXCH. COMM'N, A PLAIN ENGLISH HANDBOOK: HOW TO CREATE CLEAR SEC DISCLOSURE DOCUMENTS (1998), available at https://www.sec.gov/pdf/handbook.pdf, archived at https://perma.cc/C69C-LNF2 (Quoting Warren Buffet: "[f]or more than forty years, I've studied the documents that public companies file. Too often, I've been unable to decipher just what is being said.").

[141]ARTIFICIAL INTELLIGENCE, *supra* note 76, at 511.

[142]Hu, *supra* note 6, at 1642.

[143]Korsmo, *supra* note 12, at 1628.

[144]Korsmo, *supra* note 12, at 1628; Hu, *supra* note 6, at 1642.

[145]Korsmo, *supra* note 12, at 1629.

[146]Dorothy J. Flynn & Check Callan, *Factors That Will Impact Proxy Season 2023*, HARV. L. SCH. F. CORP. GOVERNANCE (Feb. 9, 2023), https://corpgov.law.harvard.edu/2023/02/09/factors-that-will-impact-proxy-season-2023/.

[147]SERGIO ALBERTO GRAMITTO RICCI & CHRISTINA M. SAUTTER, HARNESSING THE COLLECTIVE POWER OF RETAIL INVESTORS 3 (Christopher M. Bruner & Marc Moore, Eds, last revised Aug. 11, 2023) [hereinafter Harnessing the Collective Power of Retail Investors] (forthcoming in the RESEARCH AGENDA FOR CORPORATE LAW) (describing the increase in retail investors coming from these wireless platforms as "wireless investors"), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4147388; Caitlin McCabe, *New Army of Individual Investors Flexes Its Muscle*, THE WALL ST. J. (Dec. 30, 2020, 7:00 AM), https://www.wsj.com/articles/new-army-of-individual-investors-flexes-its-muscle-11609329600.

[148]The Rise of the Investor Generation, *supra* note 3 (describing how new

investors are younger with a median age of 35); Lush et. al., *supra* note 98 (describing how new retail investors are increasingly more diverse with the make up being 58% White, 17% African American, 15% Hispanic/Latino, and 10% Asian).

[149]Dhruv Aggarwal et al., *Meme Corporate Governance*, HARV. L. SCH. F. CORP. GOVERNANCE (Feb. 22, 2023), https://corpgov.law.harvard.edu/2023/02/22/meme-corporate-governance/.

[150]*Id.*; HARNESSING THE COLLECTIVE POWER OF RETAIL INVESTORS, *supra* note 147, at 4.

[151]*Meme Corporate Governance*, *supra* note 149; Ricci & Sautter, *Corporate Governance Gaming: The Collective Power of Retail Investors*, 22 NEV. L. J. 51, 54, 92 (2021) [hereinafter Corporate Governance Gaming] (describing both how modern retail investors are able to overcome the collective action problem through communication over social media sites such as Reddit and how this coordination will return corporations to their "partly-private-partly-public roots."); Fisch, *GameStop and the Reemergence of the Retail Investor*, 102 B.U. L. REV. 1779, 1807–1808 (2022) [hereinafter *GameStop and Reemergence*] (describing the role of YouTube and Reddit during the GameStop meme stock craze.).

[152]*Our Goals*, SEC. EXCH. COMM'N (last accessed Mar. 28, 2023), https://www.sec.gov/our-goals#:~:text=The%20SEC's%20long%2Dstanding%20three,capital%20formation%E2%80%94remains%20its%20touchstone; *see also* Solicitation of proxies in support of director nominees other than the registrant's nominees (Universal Proxy Rule), 17 C.F.R. § 240.14a-19 (2023).

[153]*See* discussion *infra* Part II.A.

[154]Korsmo, *supra* note 12, at 1600; Lin, *supra* note 9, at 468–74; Hu, *supra* note 6, at 1610.

[155]Exec. Order No. 13985, 86 Fed. Reg. 7009 (Jan. 25, 2021), https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/.

[156]Financial Literacy Report, *supra* note 14, at iii.

[157]Mark Schoeff Jr., *GOP Seeks to Open Private Markets; Democrats Might Be Willing to Talk*, INVESTMENTNEWS (Feb. 8, 2023), https://www.investmentnews.com/gop-seeks-to-open-private-markets-democrats-might-be-willing-to-talk-233755.

[158]Ted Cruz (@tedcruz), TWITTER (Jan. 28, 2021, 10:47 AM) (replying to Alexandria Ocasio-Cortez (@AOC)), https://twitter.com/tedcruz/status/1354833603943931905?lang=en.

[159]Ben Casselman & Jim Tankersley, *Looking for Bipartisan Accord? Just Ask About Big Business.*, THE NEW YORK TIMES (May 14, 2021), https://www.nytimes.com/2021/05/14/business/economy/big-business-politics-economy.html#:~:text=Republicans%20in%20Washington%20and%20around,society%20and%20the%20global%20economy.

[160]CORPORATE GOVERNANCE GAMING, *supra* note 151, at 84–86.

[161]*Educated Retail Investor*, *supra* note 3, at 206.

[162]Korsmo, *supra* note 12, at 1594; *see* discussion *infra* Part II.A.

[163]Korsmo, *supra* note 12, at 1600; Lin, *supra* note 9, at 468–74; Hu, *supra* note 6, at 1610.

[164]Korsmo, *supra* note 12, at 1600; Lin, *supra* note 9, at 468–74; Hu, *supra* note 6, at 1610.

[165]Hu, *supra* note 6, at 1614.

[166]*The Rise of the Investor Generation, supra* note 97.

[167]*Id.*

[168]*Id.*

[169]*Compare* Securities Act Release No. 7497 (1998); Rule 421(d)(2), 17 C.F.R. § 230.421(d)(2) (2023) *with* Incorporation by Reference, 17 C.F.R. § 240.12b-23 (2023).

[170]*See, e.g.*, Enhanced Disclosures by Certain Investment Advisers and Investment Companies About Environmental, Social, and Governance Investment Practices, 87 Fed. Reg. 36654 (proposed June 6, 2022).

[171]STEINBERG, *supra* note 11, at 40 (Arguing for a mandatory disclosure framework or the policy that all material information should be disclosed); Lu, *supra* note 11, at 128.

[172]Interactive Data File Submissions, 17 C.F.R. § 232.405 (2023); *Inline XBRL*, SEC. EXCH. COMM'N (last modified Feb. 9, 2023), https://www.sec.gov/structureddata/osd-inline-xbrl.html.

[173]Similar to the one as laid out in Rosov, *supra* note 130.

[174]Financial Literacy Report, *supra* note 14, at iii.

[175]Josh Katzowitz, *I Asked the AI Bot That's Taking the Internet by Storm for Financial Advice — Here's How It Went*, WHITE COAT INVESTOR (Jan. 29, 2023), https://www.whitecoatinvestor.com/chatgpt-ai-financial-advice/. With appropriate disclaimer that past performance is not an indicator of future results of course.

[176]*See, e.g.*, Jason Forrest, *I Asked an Artificial Intelligence to Draw a Chart*, NIGHTINGALE (June 29, 2022), https://nightingaledvs.com/i-asked-an-artificial-intelligence-to-draw-a-chart/.

[177]Deeken, *supra* note 1.

[178]For a further discussion on tort liability regimes for AI *see* Diamantis, *Algorithms Acting Badly: A Solution from Corporate Law*, 89 GEO. WASH. 801 (2021); Selbst, *Negligence and AI's Human Users*, 100 B.U. L. REV. 1315 (2020).

[179]*See* discussion *infra* Part III.C.

[180]Hu, *supra* note 6, at 1642.

[181]*Id.*

[182]*Id.*

[183]*What is Machine Learning? How it Works, Why it Matters, and Getting Started*, MATHWORKS (last accessed Mar. 28, 2023), https://www.mathworks.com/discovery/machine-learning.html#:~:text=Tutorials%20and%20examples-,How%20Machine%20Learning%20Works,intrinsic%20structures%20in%20input%20data.

[184]*Id.*

[185]Korsmo, *supra* note 12, at 1628; Lin, *supra* note 9, at 510.

[186]Korsmo, *supra* note 12, at 1628; Lin, *supra* note 9, at 510.

[187]Hu, *supra* note 6, at 1642.

[188]*What is Open Source?*, opensource.com (last accessed Mar. 29, 2023), http

s://opensource.com/resources/what-open-source.

[189]Michael J. Bommartio et al., *OpenEDGAR: Open Source Software for SEC EDGAR Analysis*, MIT (Nov. 20, 2020), https://law.mit.edu/pub/openedgar/release/1.

[190]*Id.*

[191]*Id.*

[192]*What is Open Source?*, OPENSOURCE.COM (last accessed Mar. 29, 2023), https://opensource.com/resources/what-open-source.

[193]*Securities and Exchange Commission v. Capital Gains Research Bureau, Inc.*, 375 U.S. 180, 194, 84 S. Ct. 275, 11 L. Ed. 2d 237 (1963).

[194]Investment Advisers Act of 1940 § 202(a)(11), 15 U.S.C.A. § 80b-2(a)(11).

[195]*Zinn v. Parrish*, 644 F.2d 360, Fed. Sec. L. Rep. (CCH) P 97920 (7th Cir. 1981); Applicability of the Investment Advisers Act of 1940 to Financial Planners, Pension Consultants, and Other Persons Who Provide Others with Investment Advice as a Component of Other Financial Services, Investment Advisors Act Release No. 1092 (Oct. 8, 1987).

[196]*Frequently Asked Questions*, OPEN SOURCE INITIATIVE (last accessed Apr. 2, 2023), https://opensource.org/faq/#:~:text=Open%20Source%E2%80%9D%20software.-,Can%20Open%20Source%20software%20be%20used%20for%20commercial%20purposes%3F,even%20sell%20Open%20Source%20software.

[197]*BAMSEC by Tegus*, TEGUS (last accessed Mar. 30, 2023), https://www.tegus.com/bamsec. Private actors have already launched their own products similar to the US Federal Court's PACER, *see* PACERPRO, https://www.pacerpro.com/ (last visited Apr. 9, 2023; PACERMONITOR, https://pacermonitor.com/ (last visited Apr. 9, 2023).

[198]Most if not all software is created for disclosure management or for analysts to more easily pull information from EDGAR.

[199]Hayes, *supra* note 87.

[200]Investment Advisers Act of 1940 § 202(a)(11), 15 U.S.C.A. § 80b-2(a)(11).

[201]Conflicts Proposal, *supra* note 73; Mark Schoeff Jr., *Brokerages Need to Update Tech Systems to Show Reg BI Work to SEC*, INVESTMENTNEWS (Feb. 1, 2023), https://www.investmentnews.com/brokerages-need-to-update-tech-systems-to-show-reg-bi-work-to-sec-233441; Observations from Broker-Dealer Examinations Related to Regulation Best Interest, Risk Alert Division of Examinations (Jan. 30, 2023), https://www.sec.gov/file/exams-reg-bi-alert-13023.pdf; inSecruities Podcast, *Covering the Commission with Mark Schoeff Jr.*, PLI, at 24:52 (June 2, 2022), https://www.pli.edu/insecurities/episode-67.

[202]*See, e.g.*, Jim DeLoach, *The SEC's Technology Modernization is Accelerating—Are you Ready?*, FORBES (Apr. 15, 2021), https://www.forbes.com/sites/jimdeloach/2021/04/15/the-secs-technology-modernization-is-accelerating-are-you-ready/?sh=41bca2965b9e.

[203]SECURITIES REGULATION, *supra* note 21, at 239–41.

[204]*Id.*

[205]*See id.*

[206]*See* Conflicts Proposal, *supra* note 73.

[207]Press Release, Sec. Exch. Comm'n, SEC Announces Successor to EDGAR Database "IDEA" Will Make Company and Fund Information Interactive (Aug. 19, 2008), https://www.sec.gov/news/press/2008/2008-179.htm.

[208]Investment Advisers Act of 1940 § 202(a)(11), 15 U.S.C.A. § 80b-2(a)(11) (2023).

[209]Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203 § 1002(15)(A)(viii) (2010).

[210]*Id.*

[211]*CFPB Acts to Protect the Public from Black-Box Credit Models Using Complex Algorithms*, CONSUMER FIN. PROT. BUREAU (May 26, 2022), https://www.consumerfinance.gov/about-us/newsroom/cfpb-acts-to-protect-the-public-from-black-box-credit-models-using-complex-algorithms/.

[212]CONSUMER FINANCIAL PROTECTION BUREAU, https://www.consumerfinance.gov/ (last visited Mar. 30, 2023).

[213]Flynn & Callan, *supra* note 146.

[214]*GameStop and Reemergence*, *supra* note 151, at 1825–26; *Educated Retail Investor*, *supra* note 3, at 205–06.

[215]Korsmo, *supra* note 12, at 1594.

[216]*See* SECURITIES REGULATION, *supra* note 21, at 261.

[217]Harnessing the Collective Power of Retail Investors, *supra* note 147, at 7.

[218]*Id.*

[219]Enhanced Disclosures by Certain Investment Advisers and Investment Companies About Environmental, Social, and Governance Investment Practices, 87 Fed. Reg. 36654 (proposed June 6, 2022).

[220]*See id.* (For example, the new rule would require disclosure of climate related risks and greenhouse emissions).

[221]RICK RIORDAN, DEMIGODS AND MONSTERS: YOUR FAVORITE AUTHORS ON RICK RIORDAN'S PERCY JACKSON SERIES 173 (2013).

[222]Aggarwal, *supra* note 149.

[223]*GameStop and Reemergence*, *supra* note 151, at 1825–26 (arguing that paternalism seems particularly misplaced regarding the protection of retail investors and that the securities laws were "designed to enable retail investors to purchase publicly traded securities."); *Educated Retail Investor*, *supra* note 3, at 205–06 (arguing that an "us" v. "them" perception of the economy is "socially divisive.").

[224]*See* discussion *infra* Part III.A.

[225]*See id.*

[226]STEINBERG, *supra* note 11, at 26; Securities Act Release No. 33-6331 (1981).

[227]*The Rise of the Investor Generation*, *supra* note 3.

[228]77 CONG. REC. 2919 (May 5, 1933) (statement of Rep. Rayburn) (emphasis added).

[229]Buckley, *supra* note 49, at 46.

[230]*See* Employment of Manipulative and Deceptive Devices, 17 C.F.R. § 24010b-5 (1951); *see*, *e.g.*, *In re Ikon Office Solutions, Inc.*, 277 F.3d 658, 667, Fed. Sec. L. Rep. (CCH) P 91675 (3d Cir. 2002); Securities Regulation, *supra* note 21, at 512.

[231]Buckley, *supra* note 49, at 56–57.

[232]Carla L. Reyes, Chapter 1 Artificial Intelligence: An Introduction to the Big Issues 3 (unpublished manuscript) (on file with Carla L. Reyes).

[233]*Id.*

[234]Conflicts Proposal, *supra* note 73 (essentially requiring firms to analyze the processes by placing a human in the loop); Buckley, *supra* note 49, at 46; Fletcher & Le, *supra* note 62, at 316; *see* FIN. STABILITY BD., ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN FINANCIAL SERVICES 7 (2017), https://www.fsb.org/wp-content/uploads/P011117.pdf.

[235]Lin, *The New Financial Industry*, 65 ALA. L. REV. 567, 581 (2014).

[236]*Id.*

[237]*Id.*

[238]*Id.*

[239]*See, e.g.*, Buckley, *supra* note 49, at 49.