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Information Asymmetry and the Protection of Ordinary Investors

Kevin S. Haeberle*

To some, the reductions in information asymmetry provided by the main securities-specific disclosure, fraud, and insider-trading laws help ordinary investors in meaningful ways. To others, whatever their larger social value, such reductions do little, if anything for these investors. For decades, these two sides of this investor-protection divide have mostly talked past each other.

This Article builds on economic theory to reveal something striking: The reductions in information asymmetry provided by the core securities laws likely impose a long-overlooked cost on buy-and-hold ordinary investors. More specifically, I explain why there is much reason to believe that the reductions take away investment return from these investors, while providing them with only limited benefits. Thus, the article presents a serious challenge to conventional wisdom on information asymmetry and the protection of ordinary investors, and argues in favor of a shift in investor-protection efforts away from the main securities laws and to areas of regulation that have received relatively little attention to date.

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INTRODUCTION

Many have long maintained that the core securities laws' dampening effect on information asymmetry is a good thing for the ordinary individuals who invest in the stock market. Whatever their view on the larger social value of reducing this asymmetry, law and economics scholars have disputed the idea that these disclosure, fraud, and insider trading rules help these individuals. As Professors Easterbrook and Fischel memorably put it, the investor-protection rationale "is as unsophisticated as the investors it is supposed to protect."¹ However, to date, the criticism has largely been limited to the idea that reducing information asymmetry is a more or less neutral — and therefore wasteful — proposition from the perspective of these investors (qua investors).

This Article takes a closer look at how the reductions in stock market² information asymmetry provided by the core securities laws affect ordinary investors. In particular, it builds on economic theory to show something striking: Those reductions likely take away investment return for buy-and-hold ordinary investors, while assisting them in only limited ways. The identification of these effects should result in a better understanding of securities law — one that helps bridge the investor-protection divide introduced above. It should also shift any focus on investor-protection efforts to less prominent areas of regulation, such as those relating to trading market structure and investment advisor duties.

It has long been said that the core securities laws reduce information asymmetry among stock market participants. However, for decades now, there has been a great divide on the implications of any such reduction for the ordinary individuals who invest in the market.³ (These individuals include everyone from mom and pop investors to other non-

¹ Frank H. Easterbrook & Daniel R. Fischel, *Mandatory Disclosure and the Protection of Investors*, 70 VA. L. REV. 669, 694 (1984) [hereinafter *Mandatory Disclosure*]; see also FRANK H. EASTERBROOK & DANIEL R. FISCHEL, *THE ECONOMIC STRUCTURE OF CORPORATE LAW* 297 (1996) [hereinafter *ECONOMIC STRUCTURE*].

² My use of the term "stock market" in this Article generally refers only to the secondary market for public company stock in the United States. Any examination of efforts to reduce informational unevenness in related markets might result in different conclusions. See, e.g., Paul G. Mahoney, *Mandatory Disclosure as a Solution to Agency Problems*, 62 U. CHI. L. REV. 1047, 1049-50 (1995) (discussing the likely effects of mandating issuer disclosure to prevent extraction of value from ordinary investors by unscrupulous promoters in the IPO market).

³ The investor-protection divide extends beyond issues relating to information asymmetry. My focus in this Article is specific to information asymmetry and the well-being of ordinary investors.

professional, outside investors with far more wealth than the typical investor. Informally stated, the group includes all everyday individual investors, with the line between them and the pros drawn somewhere short of George Soros and peers.) On one side of the divide are those regulators, legislators, judges, and scholars who can be termed investor-protection advocates. They view informational unevenness as a negative thing for these investors, and applaud efforts to reduce it on their behalf.⁴ On the other side is what I call the law and economics orthodoxy. Lawmakers and scholars in this camp generally view the unevenness as a neutral proposition for ordinary investors, and challenge at least the rationale of the relevant laws.⁵

For the investor-protection advocates, the good work done by the core securities laws is clear. The required disclosure gets valuable

⁴ The most prominent examples of this view are found in the insider trading and disclosure timing contexts. *See, e.g.*, *Chiarella v. United States*, 445 U.S. 222, 251 (1980) (Blackmun, J., dissenting) (arguing that “persons having access to confidential material information that is not legally available to others generally are prohibited . . . from engaging in schemes to exploit their structural informational advantage through trading in affected securities”); *Selective Disclosure and Insider Trading*, 64 Fed. Reg. 72,590, 72,592 (Dec. 28, 1999) (to be codified at 17 C.F.R. pts. 230, 240, 243, 249) (stating that the main goal of the Securities and Exchange Commission’s (“SEC”) fair disclosure rule requiring simultaneous disclosure of material information is to help increase “fundamental fairness to all investors”); Joel Seligman, *The Reformulation of Federal Securities Law Concerning Nonpublic Information*, 73 GEO. L.J. 1083, 1090 (1985) (advocating for a “parity of information” approach to insider trading law); *id.* at 1115 (“The primary policy reason for proscribing trading while in possession of material nonpublic information is to make investors confident that they can trade securities without being subject to informational disadvantages.”). The investor-protection view continues to animate the law today. *See, e.g.*, Brief for the United States at 18, *Salman v. United States*, 137 S. Ct. 420 (2016) (No. 15-628), 2016 WL 4088380, at *18 (focusing on “the unfairness of allowing a corporate insider to take advantage of . . . information” unavailable to outsiders (quotation marks omitted)).

⁵ For prominent dismissals of investor-protection rationales, see Easterbrook & Fischel, *Mandatory Disclosure*, *supra* note 1 (focusing primarily on mandatory-disclosure law). *See also* Zohar Goshen & Gideon Parchomovsky, *The Essential Role of Securities Regulation*, 55 DUKE L.J. 711, 713 (2006) [hereinafter *Essential Role*] (“Any serious examination of the role and function of securities regulation must sidestep the widespread, yet misguided, belief that securities regulation aims at protecting the common investor. Securities regulation is not a consumer protection law.”); Henry Manne, *In Defense of Insider Trading*, HARV. BUS. REV., Nov.-Dec. 1966, at 113, 114 (1966) [hereinafter *Defense*] (“[T]he only stock market participants who are likely to benefit from a rule preventing insider trading are the short-term speculators and traders, not the long-term investors who are regularly stated to be the objects of the SEC’s solicitude.”).

information out beyond firms,⁶ the strong prohibition on fraud helps ensure that the information is credible,⁷ and the restriction on insider trading limits use of this same information before it is available to all.⁸ These interrelated laws⁹ therefore put ordinary investors, who are by definition out in the cold beyond the firm, on a more level playing field with insiders and sophisticated professional investors.¹⁰

To supporters of the law and economics view, the lessons from modern finance (namely, those arising out of the efficient capital markets hypothesis, with the implications of modern portfolio theory rounding out the fuller story) dictate that these same laws do little, if anything, for ordinary investors.¹¹ Efficient markets, they argue, guarantee that stocks are as likely to be overpriced as underpriced,¹² thereby allowing ordinary investors to buy and sell at prices that are as

⁶ For a concise broad overview of securities disclosure law, see Kevin S. Haeberle & M. Todd Henderson, *A New Market-Based Approach to Securities Law*, 85 U. CHI. L. REV. 1313, 1321-23 (2018).

⁷ For a concise broad overview of securities fraud law, see *id.* at 1323-24.

⁸ For a concise broad overview of insider trading law, see *id.* at 1324-27.

⁹ The laws are intertwined in more than just obvious ways. For example, the restriction on insider trading removes private value from inside information, thereby incentivizing insiders to disclose it sooner. *E.g.*, Frank H. Easterbrook, *Insider Trading, Secret Agents, Evidentiary Privileges, and the Production of Information*, 1981 SUP. CT. REV. 309, 333 (1981) [hereinafter *Insider Trading*] (arguing that, if allowed to trade, insiders would hold onto material information for personal gain via quiet trading in the market over prolonged periods rather than sharing it with the public promptly); see also Zohar Goshen & Gideon Parchomovsky, *On Insider Trading, Markets, and “Negative” Property Rights in Information*, 87 VA. L. REV. 1229, 1264 (2001) [hereinafter *On Insider Trading*] (“Absent competition, insiders have no incentive to quickly disclose inside information.”). See generally Morris Mendelson, *The Economics of Insider Trading Reconsidered*, 117 U. PA. L. REV. 470, 489 (1969) (reviewing HENRY G. MANNE, *INSIDER TRADING AND THE STOCK MARKET* (1966)). But see Dennis W. Carlton & Daniel R. Fischel, *The Regulation of Insider Trading*, 35 STAN. L. REV. 857, 879 (1983) (“[I]nsider trading in some cases may accelerate the speed of disclosure because the ability to profit is dependent on information reaching the market.”); *id.* at 892.

¹⁰ See, e.g., Selective Disclosure and Insider Trading, 65 Fed. Reg. 51,716 (Aug. 24, 2000) (to be codified at 17 C.F.R. pts. 240, 243, 249) (noting that investors without equal access to information “rightly question whether they are on a level playing field with market insiders”).

¹¹ The stance is specific to ordinary investors as investors. These scholars recognize the benefits of the securities laws for all members of society through their effects on capital allocation and corporate governance. See generally *infra* notes 52–53 and accompanying text.

¹² See generally Eugene F. Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 J. FIN. 383 (1970) (describing an efficient market).

likely to be inaccurately high as they are to be inaccurately low.¹³ Holding a portfolio of such stocks therefore allows ordinary investors to diversify away firm-specific variance while still earning a return for taking on undiversifiable market-wide risk.¹⁴ These conclusions hold whether or not firms are required to share information with the public¹⁵ in a credible manner¹⁶ while restricting their insiders from trading on it beforehand.¹⁷

Despite these strongly staked positions, the important effects of the core securities laws on the ordinary individuals who invest — directly or indirectly — in public company stock have been overlooked. The existence of these effects can be seen by building on a variety of well-established, yet to date largely unconnected, principles of economics and securities law.

¹³ See, e.g., Merritt B. Fox et al., *Law, Share Price Accuracy, and Economic Performance: The New Evidence*, 102 MICH. L. REV. 331, 335-36, 336 n.13 (2003) [hereinafter *Share Price Accuracy*] (stating that in an efficient market, “the possibility that the [ordinary] investor will end up ex post worse off . . . by paying too much for the share is no greater than the possibility that she will end up better off ex post by paying too little”); Paul G. Mahoney, *Precaution Costs and the Law of Fraud in Impersonal Markets*, 78 VA. L. REV. 623, 642-43 (1992); see also BURTON G. MALKIEL, *A RANDOM WALK DOWN WALL STREET: THE TIME-TESTED STRATEGY FOR SUCCESSFUL INVESTING* 183-84 (11th ed. 2016).

¹⁴ See, e.g., RICHARD A. BREALEY, STEWART C. MYERS, & FRANKLIN ALLEN, *PRINCIPLES OF CORPORATE FINANCE* 174-77 (11th ed. 2013); Harry Markowitz, *Portfolio Selection*, 7 J. FIN. 77 (1952). For a popular account of modern portfolio theory and these general dynamics, see MALKIEL, *supra* note 13, at 222-23.

¹⁵ See, e.g., Fox et al., *Share Price Accuracy*, *supra* note 13, at 335-36 (“[A] law requiring issuers to disclose more information than they would otherwise voluntarily disclose is unnecessary to protect ordinary investors from buying shares at prices that are unfair in the sense of being on average greater than their actual values.”).

¹⁶ See, e.g., *id.*; Richard A. Booth, *The End of the Securities Fraud Class Action as We Know It*, 4 BERKELEY BUS. L.J. 1, 11 (2007) (“[I]nvestors are fully protected from simple securities fraud through diversification. They need no remedy.”).

¹⁷ See, e.g., EASTERBROOK & FISCHEL, *ECONOMIC STRUCTURE*, *supra* note 1, at 262 (stating that “the only investors who lose out to insiders are those who have already decided to sell” at current market prices, and that “if managers are knocked out of the market, [ordinary] investors are not the winners”); Manne, *Defense*, *supra* note 5, at 115 (“[T]he long-term investor may turn out to be the individual who in fact sells to the insider. But since he is normally selling for reasons unrelated to the insider’s trading, and would be selling in any event, he should be indifferent to the identity of his buyer. Actually, he may benefit from the insider’s buying on good news, as the average price received may be higher than without insider trading.”); see also Henry G. Manne, *The Case for Insider Trading*, WALL ST. J. (Mar. 17, 2003, 12:03 AM), <https://www.wsj.com/articles/SB104786934891514900> (“[I]n insider trading does little or no direct harm to any individual trading in the market, even when an insider is on the other side of the trades.”).

The story begins with the costs of information asymmetry for investors. Those costs are well-established in the economics literature — specifically in that literature relating to market microstructure economics.¹⁸ These costs mainly come in the form of reduced liquidity. Specifically, they appear as part of the spread in between the prices at which traders can buy and sell stock on demand (spread costs), and as part of the movements in market prices that follow larger trading activity (market-movement costs). Investors are also harmed by information asymmetry as a result of steps they (and their investment fund intermediaries) take to avoid these costs. These avoidance costs include the loss of utility that results from opting not to trade in light of the spread and/or market-movement costs, as well as any resources expended on trading in a way that bypasses those costs.¹⁹

Microstructure, bridged with mainstream finance, has also established that sophisticated buyers discount the price of illiquid stocks, thereby preserving the expected return they demand on those

¹⁸ Market microstructure is a branch of economics focused on the forces at play between buyers and sellers in markets. For a seminal treatise on microstructure authored by a former chief economist of the SEC aimed at a broad audience, see generally LARRY HARRIS, *TRADING AND EXCHANGES: MARKET MICROSTRUCTURE FOR PRACTITIONERS* (2003). For decades, legal scholars failed to sufficiently consider microstructure. This failure stands out in contrast to the tremendous focus on financial economics by those scholars (and judges). Thus, incorporation of the microstructure principles in focus below into the law has been limited despite robust incorporation of the principles of financial economics into the same. For a prominent example in the law, see *Basic Inc. v. Levinson*, 485 U.S. 224, 247 (1988) (“Because most publicly available information is reflected in market price, an investor’s reliance on any public material misrepresentations, may be presumed for the purposes of a Rule 10b-5 action.”). For prominent examples from the scholarly literature on securities law, see *supra* notes 11–17 and accompanying text. Notably, an emerging literature on microstructure and the law now exists. See *infra* note 182 and accompanying text.

¹⁹ I briefly touch on all of these costs in Part II.A below, and detail them in a contemporaneous work that, unlike the present ordinary investor-specific work, looks at the problem of stock market information asymmetry from a social welfare perspective. Kevin S. Haeberle, *The Information-Asymmetry Story of Securities Regulation* [hereinafter *Information-Asymmetry Story*] (unpublished manuscript) (on file with author). Interestingly, one might argue that broader precaution costs incurred in response to uncertainty in stocks’ fundamental values represent a cost of information asymmetry. See Mahoney, *supra* note 13 (discussing work undertaken to identify fraud to determine more accurate values). But even if one included the aforementioned precaution costs in a broader analysis of information asymmetry, the analysis and conclusions in this Article would remain substantially the same. In my related work on information asymmetry from a social perspective, I think more about the extent to which such precaution costs should factor into the information asymmetry story of securities regulation more generally.

financial instruments.²⁰ This illiquidity discount is also relevant to the information-asymmetry-based illiquidity presented in the form of spread and market-movement costs. But, crucially, the close examination of stock trading undertaken below shows that the discount affects different investors differently — and that it presents a net benefit to many.

More specifically, my theory starts with a basic premise: the discount at issue is determined by the marginal investor.²¹ For that reason, the size of the discount will reflect the impact of information asymmetry costs *on that investor*. The identity of this unobservable investor remains unknown.²² But the true impact of information-asymmetry-based illiquidity on any investor turns on her investment horizon, as these costs are amortized over that horizon and the return that comes along with it.²³ All else being equal, investors with shorter horizons are therefore more susceptible to being harmed by these costs, and those with longer ones less susceptible. But at least buy-and-hold ordinary investors — namely, those who passively index the market (or some part thereof) over the long haul — likely have investment horizons that are significantly longer than those of this elusive marginal investor.²⁴ Consequently, I argue, the prevailing discount is likely larger than that necessary to compensate these longer-term investors for the information asymmetry costs they incur. Paradoxically, these investors therefore likely receive more of the very thing they target by investing

²⁰ Such discounts were noted in a broad way by legal scholars as early as 1981. See Easterbrook, *Insider Trading*, *supra* note 9, at 325. And some of their general securities law and tax law implications were later modeled. See, e.g., Ian Ayres, *Back to Basics: Regulating How Corporations Speak to the Market*, 77 VA. L. REV. 945 (1991); Yair Listokin, *Taxation and Liquidity*, 120 YALE L.J. 1682 (2011). But the seminal economics work modeling these discounts in the 1980s has been largely overlooked by legal scholars. That work and its progeny are discussed *infra* Part III.

²¹ See, e.g., Henry P. Shearman, PRACTICAL ECONOMICS 193 (1st ed. 1922).

²² See, e.g., John R. Graham, *Do Taxes Affect Corporate Decisions? A Review*, in HANDBOOK OF THE ECONOMICS OF FINANCE: CORPORATE FINANCE 150 (George M. Constantinides, Milton Harris & René M. Stulz eds., 2013) (noting the fact that “the identity . . . of the marginal investor(s) who set prices between debt and equity are unknown”); see also Leonie Bell & Tim Jenkinson, *New Evidence of the Impact of Dividend Taxation and on the Identity of the Marginal Investor*, 57 J. FIN. 1321, 1330-31 (2002).

²³ I detail this point and ones following it in this paragraph in building on the economics literature regarding the relationship between investor time horizon and financial instrument liquidity. See discussion *infra* Part II.C.

²⁴ I discuss the investment horizons associated with different types of investing *supra* Part I, and connect that to my theory *infra* Part II.C.

(expected return) thanks to the presence of better-informed participants in the market.

To be clear, the added expected return — just like that associated with risk²⁵ — earned by a longer-term investor is not free. Even buy-and-hold investors can gain utility from making trades with some frequency — namely, by managing their portfolio risk to ensure it lines up with their current preferences.²⁶ To the extent buy-and-hold investors earn an extra return thanks to information asymmetry, yet maintain stock positions within their investment portfolio longer than they otherwise would due to the same, their information asymmetry premium comes at a cost. But to the extent the value of that premium exceeds the cost of the lost portfolio adjustment these investors would have pursued, they benefit from information asymmetry on net. Related costs incurred in any effort to trade without having to pay the typical spread and market-movement costs must also be considered.²⁷ But remarkably, for investors who are investing in the precise manner suggested by the Securities and Exchange Commission (“SEC”) and social science (i.e., by buying and holding a broad index),²⁸ securities-specific compulsory disclosure, prohibitions on fraud, and limitations on asymmetrically-informed trade are alarming.²⁹

These positive theories have considerable implications for the investor-protection divide and the law. With respect to the divide, they dictate that each side is off, and that a more nuanced understanding of information asymmetry and investor protection is in order. With respect to the law, they suggest that any focus on protecting ordinary

²⁵ See generally William F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*, 19 J. FIN. 425 (1964); BREALEY ET AL., *supra* note 14, at 24-25.

²⁶ See *supra* note 19 and accompanying text.

²⁷ See *infra* Parts II.A, III.A.

²⁸ See *infra* note 134 and accompanying text.

²⁹ Interestingly, some have noted how the disclosure and fraud laws can run against the interests of buy-and-hold investors in other ways. *E.g.*, Ayres, *supra* note 20, at 989-90 (arguing that in a market where information is reflected in prices after some reasonable period, “buy and hold [investors]’ . . . will want their managers to spend less time and money talking to the market because there is a lower probability . . . that they will sell in any given period”); Jonathan R. Macey & Geoffrey P. Miller, *Good Finance, Bad Economics: An Analysis of the Fraud-on-the-Market Theory*, 42 STAN. L. REV. 1059, 1070-71 (1990) (arguing that insiders should be able to make “strategic misrepresentations [that benefit the firm] even in situations where nonpublic information is leaked or where there is trading by insiders”); Mahoney, *supra* note 13, at 634-35 (noting instances in which stockholders will prefer that the corporation make false or misleading statements to the market).

secondary market investors should be on tinkering with distinct laws — and perhaps even on rolling back the core laws in focus here.

Of course, if firms and their executives disclosed little, lied often, and traded frequently, stock market information asymmetry might be so acute that it would cause serious trading frictions, if not the failure of the market altogether.³⁰ The result would not be good for ordinary investors qua investors, as it would deprive them of opportunities to invest. Nor would it be good for ordinary investors as citizens, as they would lose out on living in a society where firms could raise capital efficiently, among other things. Nonetheless, it must be remembered that even the major laws under examination here have only a marginal effect on information asymmetry. The precise size of that marginal effect is subject to a distinct longstanding debate in securities law³¹ and well beyond the scope of this Article. But it is worth highlighting here at the outset that firms and their agents have market-based incentives to share information in a credible manner without engaging in pre-disclosure trading.³² Thus, my thesis is not that all reductions in information asymmetry have the negative effects on buy-and-hold ordinary investors introduced above while providing them with only limited assistance. Instead, it is that the reductions in information asymmetry *provided by the core securities laws* (i.e., reductions in information asymmetry at the margin) have those negative effects and limited upside.

The fuller version of this story proceeds as follows. Part I provides background on the stock market, specifically by describing the four main types of trading pursued in it. Part II then builds on that description, starting with a brief overview of the costs information asymmetry imposes on market participants. It then offers the positive theory on how the reduction of those costs provided by the laws in focus affects buy-and-hold ordinary investors, and expands on that theory to provide related insights about how that reduction affects ordinary investors as a whole. Finally, Part IV explores what these theories should mean for the investor-protection divide and the law.

³⁰ See HARRIS, *supra* note 18, at 317 (“When the asymmetric information problem is particularly severe . . . spreads may be so wide that no trading occurs,” thereby resulting in “the market ha[ving] failed.”). Foreign stock markets have failed along these lines. See, e.g., John C. Coffee, Jr., *Privatization and Corporate Governance: The Lessons from Securities Market Failure*, 25 J. CORP. L. 1, 10-16 (1999) (comparing Poland’s success with the Czech Republic’s failure following the fall of the Iron Curtain).

³¹ See *infra* note 152 and accompanying text.

³² See *infra* notes 144–147 and accompanying text.

I. THE FOUR MAIN TYPES OF TRADING

Investors may dominate our imagination when we think about those participating in the stock market. But in the market itself, interactions are between traders. Sometimes those traders are investors themselves. Many individuals trade “directly” through online brokerage accounts. So, too, do many institutions such as large insurance companies. However, other times those traders are large investment funds, buying and selling on behalf of a wide range of individual and institutional investors. Here forward, I use this fine distinction between traders and investors. Using it allows for a focus not only on those that buy and sell in the market (the traders) and those whose capital is being ventured (the investors), but also on the distinction between the two. This initial Part therefore provides a quick overview of an increasingly prominent model of the stock market that revolves around four main types of trading (portfolio trading, information trading, noise trading, and market making) and the investors who engage in them, directly or indirectly.³³ In so doing, it provides important background for the theories about information asymmetry and ordinary investors offered in the next Part.

A. *Portfolio Trading*

Portfolio trading centers on the accumulation, balancing, and liquidation of the components of diversified portfolios of stocks.³⁴ Those engaged in this trading target the healthy risk premium that has traditionally been available to those who hold varied portfolios of public company stock over sustained periods.³⁵ Buy-and-hold ordinary

³³ Models along these general lines are commonly found in microstructure works. See, e.g., HARRIS, *supra* note 18 (providing a similar model, albeit with additional detail and sub-categories unnecessary for present purposes). They have also been present in the securities law literature for some time. See, e.g., Goshen & Parchomovsky, *On Insider Trading*, *supra* note 9, at 1239-40, 1243, and have been deployed with more frequency over the past few years, *infra* note and accompanying text.

³⁴ Some models of the stock market have referred to much of this type of trading (namely, the liquidation of portfolios for consumption purposes) as that associated with “liquidity trading.” See, e.g., Goshen & Parchomovsky, *On Insider Trading*, *supra* note 9, at 1238-39. The nomenclature used in this Article is more in line with that found in the emerging literature on microstructure and the law referenced *supra* note 18, and, in my mind, more helpful to understanding trading strategies.

³⁵ See ELROY DIMSON, PAUL MARSH & MIKE STAUNTON, TRIUMPH OF THE OPTIMISTS: 101 YEARS OF GLOBAL INVESTMENT RETURNS 42 (2002) (finding, on average, 6.7% after-inflation annual returns on public stocks in the United States over sustained investment periods throughout the twentieth century). Gains over the long haul over the past almost two decades have been consistent with these results. See, e.g., DIMENSIONAL FUND

investors are usually engaged in this type of trading.³⁶ Many merely buy and hold a broad index of the entire market, and watch the index balance itself as sample stocks increase or decrease in value.³⁷ Others similarly buy and hold, yet target a more specific set of stocks based on their desire for a more specific risk and return. Still, even when combined, these two sets of buy-and-hold investors make up only a subset of the portfolio trading universe. After all, institutions engage in portfolio trading as well.³⁸ In the end, the general target here is the same whether the capital at issue is supplied by ordinary individuals or sophisticated institutions: an investment return derived from taking on market-wide risk.

Investors often engage in portfolio trading directly. For example, some buy-and-hold ordinary individuals take part of their surplus each month and use it to purchase a broad sampling of public company stock through a retail-level brokerage account. Over the years, they might

ADVISORS, MATRIX BOOK: 2017 (2017) (ebook) (showing an annualized nominal rate of return of 9.6% for an index of domestic public firms since 2002).

³⁶ See generally HARRIS, *supra* note 18, at 488-91 (discussing the buy-and-hold approach); ZVI BODIE, ALEX KANE & ALAN J. MARCUS, INVESTMENTS 357 (10th ed. 2013) (“A passive strategy aims only at establishing a well-diversified portfolio of securities without attempting to find under- or overvalued stocks. Passive management is usually characterized by a buy-and-hold strategy.”).

³⁷ See, e.g., John C. Bogle, *Reflections on ‘Toward Common Sense and Common Ground?’*, 31 J. CORP. L. 31 (2007) (noting “the passive investment strategy followed by the index fund — a fund that, in essence, owns the entire stock market . . . [and] carries only tiny operating expenses and almost no portfolio transaction costs.”); Robert C. Pozen, *Curbing Short-Termism in Corporate America: Focus on Executive Compensation*, GOVERNANCE STUD. (Brookings Inst., D.C.), May 2014, at 2 (discussing “quasi-indexers” as those with “highly diversified portfolios of publicly traded securities, and also a high degree of ownership continuity since they seldom trade.”); Mahoney, *supra* note 13, at 636 (“[U]niformed investors engage in no search. They act as price-takers and consequently, do not attempt to ‘beat the market’ by trading on the basis of information that happens to come their way. The rational uninformed investors will hold the market portfolio and trade only in response to changes in her wealth or consumption.”).

³⁸ E.g., Anne Tergesen & Jason Zweig, *The Dying Business of Picking Stocks*, WALL ST. J. (Oct. 17, 2016, 12:12 PM), <https://www.wsj.com/articles/the-dying-business-of-picking-stocks-1476714749> (“Pension funds, endowments, 401(k) retirement plans and retail investors are flooding into passive investment funds Public pension plans had 60% of their U.S. stock allocations in index funds in 2015, up from 38% in 2012, according to research from Greenwich Associates. At endowments and foundations, the index-fund share rose to 63% from 40% in that time period.”); *Our Clients*, NUVEEN, <https://www.tiaa.org/public/assetmanagement/clients-we-serve> (“We offer both traditional and alternative strategies that seek to provide attractive long-term investment solutions for endowments and foundations.”) (last visited Oct. 11, 2019); see, e.g., *Solutions for Insurers*, VANGUARD, <https://institutional.vanguard.com/web/c1/solutions/insurers/resources> (last visited Oct. 12, 2019).

adjust pieces of the portfolio they amass by purchasing stocks that are thought to provide higher returns at higher risk, while selling off other stocks (or perhaps bonds) associated with more conservative investing. Or, if their personal tastes and preferences call for less risk, they might do the opposite. For example, as their stock positions grow relative to their bond and other holdings, they sell stocks to get back into their optimal total investment portfolio. Whatever their exact approach throughout the period in which they hold their portfolios, in the end, these individuals generally seek to liquidate those portfolios in the future to consume.

Still, most ordinary investor portfolio trading occurs indirectly through investment fund intermediaries.³⁹ For example, an average individual retirement saver might make things easier on herself by simply opting for some portion of her paycheck to go to a 401(k) account every two weeks. Once the account is funded, investment funds like those operated by Fidelity and Vanguard can do the portfolio trading on her behalf. As a general matter, these institutional-level traders are constantly engaging in portfolio trading to meet redemption or subscription demands from investors based on the latter's savings versus consumption patterns. To the extent they are targeting a specific segment of the market (namely, one with a specific risk characteristic), these funds will also have to buy and sell to adjust their index from time to time.

Insurance companies, university endowments, and a wide range of wealthy extraordinary individuals and entities also entrust investment funds to amass, maintain, and liquidate diversified portfolios of stocks on their behalf.⁴⁰ The especially wealthy in this group may even take the steps necessary to engage in their portfolio trading directly, without the help of outside investment intermediaries. All of these investors may pursue a purely passive, broad indexing buy-and-hold approach to their portfolio trading. But they also often opt for more active management of even this type of "passive" portfolio.

Crucially, the great majority of stocks held in an indexed investment are accumulated and held over sustained periods. For a direct trading

³⁹ See Jesse Bricker et al., *Changes in U.S. Family Finances from 2013 to 2016: Evidence from the Survey of Consumer Finances*, FED. RES. BULL., Sept. 2017, at 18-19 (noting that only 13.9% of families owned individual stocks, yet 52.1% invested through retirement accounts); see also, e.g., INV. CO. INST., 2017 INVESTMENT COMPANY FACT BOOK 30 (57th ed. 2017), https://www.ici.org/pdf/2017_factbook.pdf ("Retail investors (i.e., households) held the vast majority (89 percent) of the \$16.3 trillion in US mutual fund assets."). The proportion of *long-term* mutual fund assets held by retail investors is even higher (95 percent). See *id.*

⁴⁰ See *supra* note 38 and accompanying text.

retirement saver, this might mean accumulating their diversified portfolio of stocks and holding much of it over the course of decades.⁴¹ Rebalancing investment positions in the portfolio in light of changing risk preferences, stock-to-bond ratios, or the like to maximize investor utility still plays a role for these direct traders and their indirect-trading brethren. But indexing portfolio trading investors typically sell out of only a small fraction of their holdings each year.⁴² Indeed, for those who index the entire market, their portfolio of stocks balances itself throughout the life of their investment. For example, Microsoft makes up less of the portfolio when its value goes down relative to other holdings in the portfolio, and more of the portfolio when its value moves in the opposite direction.

B. Information Trading

Information trading, as the terminology suggests, mainly involves buying and selling based on information as to companies' fundamental values that is not yet reflected in market prices.⁴³ This trading centers on the use of information to identify (and buy) stocks with market prices that are lower than their fundamental values,⁴⁴ and to spot (and sell) stocks with market prices that are higher than their fundamental values.⁴⁵

Much information trading is attributable to sophisticated hedge funds, private equity funds, and actively managed mutual funds.⁴⁶

⁴¹ See *supra* note 36 and accompanying text.

⁴² See *supra* note 37 and accompanying text.

⁴³ Microstructure models focus on "informed trading." See, e.g., HARRIS, *supra* note 18, at 6; Merritt B. Fox, Lawrence R. Glosten & Gabriel V. Rauterberg, *Informed Trading and Its Regulation*, 43 J. CORP. L. 817, 825 (2018) [hereinafter *Informed Trading*] ("Informed traders buy or sell a stock due to private information providing them with a superior estimate of a stock's value than that implied by the stock's current price."). My focus on "information trading" is intentionally broader than this focus on only those who are actually better informed than the market when they trade.

⁴⁴ E.g., Fox et al., *Informed Trading*, *supra* note 43, at 826 ("Fundamental value information arises from observing varied pieces of information that are publicly available or involve observable features of the world and analyzing this information in a sophisticated way that enables an assessment of a stock's value superior to that implied by the current market price."); Goshen & Parchomovsky, *Essential Role*, *supra* note 5, at 721 ("Pricing information requires analyzing the information to determine its value, and then trading based on discrepancies between price and value.") (emphasis added).

⁴⁵ E.g., Fox et al., *Informed Trading*, *supra* note 43, at 826; Goshen & Parchomovsky, *Essential Role*, *supra* note 5, at 721.

⁴⁶ E.g., Fox et al., *Informed Trading*, *supra* note 43, at 826 ("Examples of fundamental value information traders are actively managed mutual funds, hedge funds,

However, like with portfolio trading, individuals too can engage in information trading directly. While hopelessly outmatched by institutional traders in the overwhelming majority of all cases, the direct-trading little guy can win in this game at times. Sometimes such wins come as a result of conduct that is illegal under insider trading law. Other times it is perfectly consistent with the law, such as when it is the product of skilled information collection and analysis by extraordinary individuals working with bits and pieces of immaterial information from firms⁴⁷ or privately generated material information generated from outside them.⁴⁸

Although there are limits on hedge fund investing,⁴⁹ all individuals, whether ordinary or superiorly skilled, can engage in information trading through at least actively managed mutual funds. There has long been concern that many such funds are to some strong degree (or even entirely) engaged in mere portfolio trading.⁵⁰ To the extent an ordinary investor is participating in the market through such a fund, the investor is engaged in the relevant degree of portfolio trading and not information trading. In other words, the ordinary investor is still pursuing something at least closer to a buy-and-hold approach for some part of the portfolio — even if more active management was contemplated.

Whatever the precise nature of much “actively managed” trading, the well-established positive externality that arises out of information traders’ profit-seeking work should not be overlooked. As a byproduct of their informed buying and selling, these traders bring new

pension funds, and the professionally managed portfolios of wealthy individuals and non-profits.”).

⁴⁷ *E.g.*, *id.* at 869 n.165 (noting “trades based on one or more bits of non-public immaterial information from within an issuer,” and stating that “existing interpretations of Rule 10b-5 in fact do not find [this trading] illegal”).

⁴⁸ *E.g.*, *id.* at 883 (“[A] non-issuer institution that has generated information of value for assessing an issuer’s stock (or has already purchased it, directly or indirectly, from a person that has generated it) can use this information in three possible ways: (1) trade on the information; (2) provide it privately to certain other traders; or (3) announce the information publicly.”).

⁴⁹ Generally, only “accredited investors” may invest with hedge funds. *See* 17 C.F.R. § 230.501(a) (2017). Accreditation is accomplished through surpassing either a net worth threshold or an annual income threshold. *Id.* at § 230.501(a)(5)-(6).

⁵⁰ *E.g.*, Jill E. Fisch, *Rethinking the Regulation of Securities Intermediaries*, 158 U. PA. L. REV. 1961, 2018 (2010). Supporting the same underlying concerns, an earlier empirical study concluded that “institutions as a whole seem to do little more than hold the market portfolio.” *See* Jonathan Lewellen, *Institutional Investors and the Limits of Arbitrage*, 102 J. FIN. ECON. 62, 77 (2011).

information to the market.⁵¹ In this way, they help generate stock prices that better reflect information dispersed throughout society⁵² — and therefore the larger benefits that are thought to flow from those more accurate prices.⁵³ It is for this reason that commentators have long extolled the virtues of these market participants' efforts.⁵⁴

Importantly, despite these benefits, information trading is at the root of the concern for informational unevenness held by investor-protection advocates. This concern has traditionally been voiced as a general one for fairness.⁵⁵ But as I explain in Part II.A, market microstructure economics provides a more tangible way of thinking about the costs that better-informed traders impose on others.

Lastly, information trading generally involves a short investment timeframe relative to that associated with portfolio trading.⁵⁶ Investors engaged in information trading might have much reason to load up on an individual stock. But maintaining that investment position involves taking on firm-specific risk beyond that which can be diversified away,⁵⁷

⁵¹ E.g., HARRIS, *supra* note 18, at 6 (“[Informed] [t]raders . . . estimate fundamental values [and] cause prices to reflect their value estimates.”).

⁵² See Friedrich A. Hayek, *The Use of Knowledge in Society*, 35 AM. ECON. REV. 519, 519-20 (1945) (providing one of the seminal works on the role of markets in incorporating far-ranging pieces of information into prices).

⁵³ The two main social benefits of enhanced price accuracy are said to be more efficient capital allocation and better corporate governance. For a seminal work on these connections in the legal literature, see Merritt B. Fox, *Shelf Registration, Integrated Disclosure, and Underwriter Due Diligence: An Economic Analysis*, 70 VA. L. REV. 1005, 1013-14 (1984). See also Marcel Kahan, *Securities Laws and the Social Cost of “Inaccurate” Stock Prices*, 41 DUKE L.J. 977, 979 (1992).

⁵⁴ E.g., Goshen & Parchomovsky, *Essential Role*, *supra* note 5, at 764 (“[I]nformation traders will be able to generate the benefits associated with close analyst coverage, such as efficient pricing . . . and better monitoring of agency costs.”); *id.* at 715 (asserting that the essential role of “securities regulation is . . . to facilitate and protect the work of information traders”).

⁵⁵ See *supra* note 4 and accompanying text.

⁵⁶ See *supra* notes 36–37 and accompanying text (discussing the index approach to investing); see also HARRIS, *supra* note 18, at 488 (comparing yearly turnover of active and passive portfolio managers).

⁵⁷ See Andrei Shleifer & Robert W. Vishny, *Equilibrium Short Horizons of Investors and Firms*, 80 AM. ECON. REV. 148, 149 (1990) (“Arbitrage, however, is often risky and risk cannot be completely sold off in the market. If, for example, an asset is underpriced relative to its fundamental value, and a smart investor buys it, he has to bear the risk that before mispricing is eliminated or reduced the fundamental value actually falls. In this case, his arbitrage trade results in a loss even though it was ex ante attractive. In addition to fundamental risk, the smart investor bears the risk that the mispricing gets worse before it is eliminated”); *supra* note 14 and accompanying text. Recent work suggests that the costs of pursuing an information-based strategy are far larger than many had previously thought. See Ian Ayres & Edward Fox, *Alpha Duties: The Search*

among other notable costs.⁵⁸ For these reasons, all else being equal, information traders will want to exit that position sooner rather than later.⁵⁹ Indeed, even for mutual funds, turning over (i.e., changing) all portfolio holdings within a single year is not uncommon.⁶⁰ Moreover, the average overall holding period for a public company stock has been reported to be just a third of a year,⁶¹ something that also reflects the

for Excess Returns and Appropriate Fiduciary Duties, 97 TEX. L. REV. 445, 448-50 (2019). More specifically, Professors Ayres and Fox note that those seeking an alpha return “sacrifice some of the benefits of diversification, low fees, or appropriate risk.” *Id.* at 448. The authors then provide empirical support for the conclusion that “the required offsetting alpha to justify diversification, exposure, and excess-fee losses are often surprisingly large.” *Id.* at 515.

⁵⁸ See, e.g., Andrei Shleifer & Lawrence H. Summers, *The Noise Trader Approach to Finance*, J. ECON. PERSP., Spring 1990, at 19, 21 (1990) (“[T]here are several reasons that it makes sense to assume that arbitrageurs have short horizons. Most importantly, arbitrageurs have to borrow cash or securities to implement their trades, and as a result must pay the lenders *per period* fees The structure of transaction costs thus induces a strong bias toward short horizons In addition, the performance of most money managers is evaluated at least once a year and usually once every few months, also limiting the horizon of arbitrage. As a result of these problems, resources dedicated to long-term arbitrage against fundamental mispricing are very scarce.”).

⁵⁹ See, e.g., *id.*; Shleifer & Vishny, *supra* note 57, at 152-53 (arguing that short-term arbitrage will be more common than long-term arbitrage due to the costs of holding securities for longer periods for arbitrageurs).

⁶⁰ E.g., JOHN C. BOGLE, COMMON SENSE ON MUTUAL FUNDS 380 (2010) (“Twenty-five years ago, fund portfolio turnover averaged 30 percent annually; today, it averages nearly 90 percent.”); HARRIS, *supra* note 18, at 488 (“Active managers often have turnover rates of more than 100 percent per year.”); NEW YORK STOCK EXCH., REPORT OF THE NEW YORK STOCK EXCHANGE COMMISSION ON CORPORATE GOVERNANCE 13 (2010) (“Annualized turnover of stocks traded on the NYSE is now estimated to be over 100%, which means that on average an NYSE-listed company experiences trading volume each year exceeding the total number of its issued and outstanding shares.”); Lynne L. Dallas, *Short-Termism, the Financial Crisis, and Corporate Governance*, 37 J. CORP. L. 265, 295-96 (2012) (discussing the high turnover rates of actively managed investment funds); Laura Bruce, *Mutual Fund Turnover and Taxes*, MARKETWATCH (Mar. 11, 2002, 12:18 PM), <https://www.marketwatch.com/story/mutual-fund-turnover-and-taxes> (“William Harding, an analyst with Morningstar, says the average turnover ratio for managed domestic stock funds is 130 percent. ‘Many managers claim to be long-term investors when, in reality, the average mutual fund manager is turning the portfolio more than once a year.’”); *Stocks Traded, Turnover Ratio of Domestic Shares (%) - United States*, WORLD BANK, <https://data.worldbank.org/indicator/CM.MKT.TRNR?locations=US&view=chart> (last visited Aug. 30, 2019) (reporting an overall turnover rate for U.S. domestic public stocks of well over 100% over the past 20-plus years). *But see* Anne M. Tucker, *The Long and the Short: Portfolio Turnover Ratios and Mutual Fund Investment Time Horizons*, 43 J. CORP. L. 581, 612 n.168, 627 (2018) (finding similar turnover rates for active and passive mutual funds, and suggesting “closet indexing” by the “active” funds).

⁶¹ E.g., *In re Morton’s Rest. Grp. S’holders Litig.*, 74 A.3d 656, 670 n.77 (Del. Ch. 2013) (summarizing several studies of modern equity turnover); *Taking the Long View*, ECONOMIST (Nov. 24, 2012), <https://www.economist.com/business/2012/11/24/taking-the-long-view> (“[T]he average time that people hold a stock on the New York Stock

short investment time horizon of these traders. Some of these numbers must be viewed along with a more complete understanding of the contemporary stock market.⁶² But their general content alone is nonetheless striking and indicates the pervasiveness of active trading by information traders today.⁶³

C. Noise Trading

The third broad type of trading (noise trading) can be thought of as information trading gone wrong. Noise trading involves buying and selling based on what the trader believes is superior information, yet far more often than not fails due to a flawed approach.⁶⁴ The problem in the approach is generally traceable to interpretations of information that

Exchange has tumbled from eight years in 1960 to four months in 2010.”); Jesse Eisinger, *Challenging the Long-Held Belief in ‘Shareholder Value’*, N.Y. TIMES: DEALBOOK (June 27, 2012, 12:00 PM), <http://dealbook.nytimes.com/2012/06/27/challenging-the-long-held-belief-in-shareholder-value> (“The average holding period of a stock was eight years in 1960; today, it’s four months.”).

⁶² A very large portion of stock trading goes through professional intermediaries. See *infra* Part I.D (describing market making). Thus, a very large portion of sales of shares from one “natural investor” (e.g., a retiree) to another such investor (e.g., a retirement saver) are recorded as two trades. One trade takes place when the retiree sells the shares to the intermediary, and another when that intermediary passes those shares on to the retirement saving buyer. See *id.* Turnover rates reported by, for example, exchanges thus may reflect some double counting of trades between actual investors. In my research into stock turnover rates, I have not seen evidence of this intermediation — and thus double counting — being considered. Nevertheless, even when that intermediation is considered, these rates remain strikingly high. And while this intermediation would increase turnover rates for trading on exchanges, it should not increase turnover rates for individual funds. In short, even if what amounts, in substance, to a transaction between a natural seller and a natural buyer on an exchange may involve two trades in many cases, the turnover of shares by a mutual fund involves just one.

⁶³ In 2010, Chief Justice Strine of the Delaware Supreme Court published an essay “highlight[ing] the underlying facts regarding how short a time most stockholders, including institutional investors, hold their shares” and, alternatively stated, “rais[ing] the basic facts regarding the short-term horizons of most equity owners” Leo E. Strine, Jr., *One Fundamental Corporate Governance Question We Face: Can Corporations Be Managed for the Long Term Unless Their Powerful Electorates Also Act and Think Long-Term?*, BUS. LAW., Nov. 2010, at 1-2. In the essay, he reviews a very large number of sources to support his concern for the short duration of active investors. Those sources report annual share turnover for actively managed mutual funds in the 100% range, and hedge-fund turnover in the 300% range. See *id.* at 8-12. He also notes that “[o]ne respected academic commentator suggests that even pension funds typically turn over their portfolios in a year.” *Id.* at 10 (quotation marks omitted).

⁶⁴ E.g., J. Bradford DeLong et al., *Noise Trader Risk in Financial Markets*, 98 J. POL. ECON. 703, 706-07 (1990); Fox et al., *Informed Trading*, *supra* note 43, at 831-32; Shleifer & Summers, *supra* note 58, at 23.

do not comport with consensus views over even their investment horizon, such as a trade based on a development that has already been priced into the stock.⁶⁵ Noise traders have therefore long been denied even categorization along with information traders, even though their focus is — from at least their perspective — on using information to earn trading profits.⁶⁶

Like with portfolio trading and information trading, those behind noise trading can be ordinary individuals. To get a sense of what is perhaps the most common type of investor operating in this way, one need only think of the day traders sitting at home during the internet boom of the late 1990s, reading “Heard on the Street”-type columns and submitting orders to trade from their laptops from the couch. But you could also conjure up other images. Countless institutions no doubt engage in the same basic behavior, albeit surrounded by larger screens in fancier work spaces. But even when those engaged in noise trading are ordinary individuals or investment funds using ordinary individuals’ capital, noise trading looks very different than buy-and-hold investing.

Given the nature of their trading motivations, noise traders likely have an investment horizon that is loosely on par with that of information traders described in the preceding section. But some no doubt fail to even understand the basics of asset pricing,⁶⁷ and therefore stay in undiversified positions longer than the average savvy information trader. Still, relative to the universe of buy-and-hold ordinary investors described at the outset of this Part, these active traders likely have short investment horizons.

D. Market Making

Unlike the three types of trading introduced thus far, the final broad type, market making, does not aim to amass investment positions in stock. Quite the opposite, this non-directional trading seeks to generate income by supplying a specialized intermediation service for any trader in the market⁶⁸ — and targets little to no inventory of stock at the end

⁶⁵ E.g., Fox et al., *Informed Trading*, *supra* note 43, at 831 (“Noise traders believe they have information that permits a more accurate appraisal of an issuer’s value, but that information either is already reflected in price or is irrelevant to developing a more accurate appraisal.”); DeLong et al., *supra* note 64, at 706-07; J. Bradford DeLong, Andrei Shleifer, Lawrence H. Summers & Robert J. Waldmann, *The Size and Incidence of the Losses from Noise Trading*, 44 J. FIN. 681, 683 (1989).

⁶⁶ E.g., Goshen & Parchomovsky, *Essential Role*, *supra* note 5, at 714-15 (treating information traders and noise traders as distinct types of traders).

⁶⁷ See *supra* notes 14 & 57 and accompanying text.

⁶⁸ E.g., HARRIS, *supra* note 18, at 279 (referring to these traders simply as “dealers”).

of each day.⁶⁹ These professionals supply liquidity to other market participants — specifically, to those that seek to transact on demand rather than searching around for a true non-intermediary counterparty or patiently waiting until such a counterparty comes their way.⁷⁰ Today, market makers often meet this demand with respect to every individual stock in the market.⁷¹ They also now generally supply these services relating to the trading of exchange-traded funds and other financial instruments in that same market and abroad.⁷² And they generally do all of this via computer-driven trading, rather than through individual men in color-coded jackets standing on a trading floor.⁷³

Unlike with portfolio, information, and noise trading, ordinary investors — by definition — do not engage in *professional* market making. Still, a more detailed description of market makers and how they operate is crucial for understanding the extent to which the core securities laws serve a significant investor-protection role post-IPO.

Market makers supply their services by quoting bid prices and ask prices around stocks' current market values.⁷⁴ Their bid quotes generally represent firm offers to buy stock.⁷⁵ Bid prices are thus those

⁶⁹ Walter Bagehot, *The Only Game in Town*, 27 FIN. ANALYSTS J. 12-14 (1971); Mark B. Garman, *Market Microstructure*, 3 J. FIN. ECON. 257 (1976); see also HARRIS, *supra* note 18, at 283.

⁷⁰ See HARRIS, *supra* note 18, at 278. Consistent with this description, many refer to these traders today as “professional liquidity providers.”

⁷¹ See, e.g., Chris Concannon, *Program on the Law and Economics of Capital Markets Workshop: High-Frequency Trading*, COLUMBIA LAW SCH. (Nov. 29, 2012), <https://capital-markets.law.columbia.edu/events/high-frequency-trading> [http://perma.cc/Y5RS-67NG] (describing an electronic trading firm and market maker that trades equities across exchanges and platforms).

⁷² E.g., Virtu Financial, Inc., Registration Statement Under the Securities Act of 1933 (Form S-1), at 1 (Mar. 10, 2014), <http://d18rn0p25nwr6d.cloudfront.net/CIK-0001592386/6f927b41-4dd3-4a2b-83d1-ff125d154b90.pdf> (asserting that they provide liquidity “in more than 10,000 securities and other financial instruments on more than 210 unique exchanges, markets and liquidity pools in 30 countries around the world”); *Customized Liquidity*, VIRTU FINANCIAL, <https://www.virtu.com/market-making/customliq/veq/> (last visited Oct. 12, 2018) (“In equities, we provide access to liquidity through a range of global stocks, ETPs and ADRs, including many difficult-to-trade names.”).

⁷³ Today, algorithms deployed by a handful of trading firms are thought to dominate the business of market making. See Jonathan A. Brogaard et al., *High Frequency Trading and Price Discovery*, 27 REV. FIN. STUD. 2267, 2271-78 (2014) (using a NASDAQ data set to show that high-frequency traders supply liquidity for over half of all trades); Albert J. Menkveld, *High-Frequency Trading and the New Market Makers*, 16 J. FIN. MARKETS 712, 714 (2013).

⁷⁴ See, e.g., HARRIS, *supra* note 18, at 297.

⁷⁵ When displayed on trading platforms, the law — not just industry practice — ensures that the quotes are firm. See *Dissemination of Quotations in NMS Securities*,

in return for which traders can sell stock on demand. Their ask quotes likewise represent the prices at which they are prepared to sell in the same fashion. Ask prices are thus those at which traders can buy stock immediately with certainty. For example, assume the market currently values a stock at \$10.50 per share. If market makers were quoting \$10.49 best (highest) bid prices and \$10.51 best (lowest) ask ones around that value, then other traders could sell the stock to them by accepting the \$10.49 bid price, or buy it from them by paying the \$10.51 ask price. In order to transact on demand against these prices, these sellers thus must sell at a discount (they get only \$10.49 per share for this stock valued at \$10.50), and these buyers must pay a premium (they must pay \$10.51 per share for the \$10.50 stock).

Market makers post only a limited quantity of shares at their best (highest) bid prices and best (lowest) ask ones. Beyond those “inside spread”⁷⁶ quotes, they then post a series of successively inferior ones. So, they may quote a best bid of \$10.49 and ask of \$10.51 around a market value of \$10.50 for a stock, but they may only post 5,000 shares at each. Beyond that, they might quote 5,000 additional shares at each “tick” below the highest \$10.49 bid price (\$10.48, \$10.47, \$10.46, and so on) and 5,000 additional shares at each tick above the lowest \$10.51 ask price (\$10.52, \$10.53, \$10.54, and so on). Those successively inferior prices of course increase the discount large opposite-side traders must accept to sell on demand, and increase the premium other such traders must pay to buy on demand. In other words, the average price per share they receive in return for stock will be lower than that associated with the best (highest) bid price, and the average price per share they pay in return for stock will be higher than that associated with the best (lowest) ask price.

Market makers do not specialize in understanding the *fundamental* values of the instruments they trade.⁷⁷ Instead, their primary mission is to nail down those instruments’ *market* values. As the nomenclature suggests, they aim to find the value around which to place their quotes

Rule 602(b), 17 C.F.R. § 242.602(b)(2) (2017) (requiring displayed quotes to be legally binding offers to trade).

⁷⁶ The term “inside spread” is traceable to a vertical depiction of prices, where they are set out with bids below a stock’s market value and asks above that value — meaning that the best (highest) bid and best (lowest) ask surrounding the current market value fall in the *inside* of the diagram once a slew of successively inferior bids and asks are added to it.

⁷⁷ E.g., HARRIS, *supra* note 18, at 277 (“[Market makers] tend to . . . not know much about . . . the fundamental values of the instruments that they trade.”).

so that a two-sided *market* of buyers and sellers arises.⁷⁸ Doing so allows them to profit by purchasing shares from the sellers at bid prices that are below the ask prices for which they turn around and sell them to the *buyers* — thereby earning their bid-ask spread. For example, the market makers above would make two cents per share each time they were able to buy shares at their bid prices of \$10.49 opposite some traders' sell orders, and then sell those shares to other traders' buy orders at their slightly higher \$10.51 ask prices. In an electronic stock market where about 7 billion shares are transacted each day in U.S. stocks alone,⁷⁹ even bid-ask spreads far smaller than the one in this example can produce considerable profits.

Importantly, stocks generally do not just have a single “market price.” Instead, as the above description indicates, they have at least two: one at which traders can buy them on demand (the ask price), and one in return for which they can sell them in that manner (the bid price). And those two market prices are generally distinct from the price that represents a stock's current market value. That current market value is, as a general matter, simply halfway between the market prices.⁸⁰

* * *

This initial Part provided a basic description of the four main types of trading in the stock market today. Whether conducted “directly” through brokerage accounts or indirectly through investment-fund intermediaries, portfolio-, information-, and noise-trading investors accumulate stock positions with an eye on financial gain. The high-speed-trading institutions that are in the business of making markets with an aim of zero inventory at the end of each trading day are after the same. But as this quick overview alone makes clear, the motivations and strategies inherent in each of these four types of trading vary greatly. An understanding of the differences along these lines emphasized above provides much of the background for the remainder of this Article.

⁷⁸ *E.g.*, *id.* at 401 (“Market makers simply try to discover the prices that produce balanced two-sided order flows.”); *see also supra* note 69 and accompanying text.

⁷⁹ *U.S. Equities Market Volume Summary*, CBOE, http://www.bats.com/us/equities/market_share [<http://perma.cc/4PWJ-99UJ>] (providing the daily trading volume across the market); *see also supra* note 72.

⁸⁰ *See, e.g.*, HARRIS, *supra* note 18, at 287-88 (“[Market makers aim to] . . . set their bid prices just below fundamental values and their ask prices just above”).

II. HOW INFORMATION ASYMMETRY AFFECTS BUY-AND-HOLD
ORDINARY INVESTORS AND THE LARGER UNIVERSE OF ORDINARY
INVESTORS

The relevant discord between investor-protection advocates and the law and economics orthodoxy is clear.⁸¹ But neither side has provided a close enough look at how stock market information asymmetry actually affects ordinary investors. This Part therefore focuses on interactions of the traders introduced in the previous one to explain how information asymmetry in the stock market manifests itself in the form of a specific type of illiquidity.⁸² At first glance, the ordinary investor impact of these dynamics may seem simple: all ordinary investors get burned by information asymmetry due to reduced liquidity. But as detailed in this Part, it is well-established that markets discount the value of financial assets when they exhibit this type of illiquidity. These discounts, I argue, affect different ordinary investors in different ways, more or less preserving the expected return for some, but providing too little compensation to others and too much to yet others. I thus theorize below that while the reductions to information asymmetry provided by the core securities laws provide meaningful protection for some ordinary investors, they impose a long-overlooked cost on many others. In so doing, I explain why buy-and-hold ordinary investors likely suffer from this cost and consider the extent to which that suffering might be negated by any other benefits of the reductions. I then expand on that thinking to consider what this all means for ordinary investors as a whole.

A. *The Relevant Illiquidity*

Information asymmetry in the stock market manifests itself in a specific type of illiquidity. The starting point for understanding this illiquidity is found in interactions between information traders and market makers.

⁸¹ See *supra* notes 4–17 and accompanying text.

⁸² A broader set of information asymmetry concerns for investors can also be identified — namely, those relating to fairness and perceptions of fairness. An even broader set of concerns for society no doubt exists as well, including those for confidence in the market. I discuss the fairness and perceptions-of-fairness concerns in Part III.A below. In my related broader work, I discuss all of these concerns in more detail. See Haeberle, *Information-Asymmetry Story*, *supra* note 19.

Market makers are generally at an informational disadvantage when savvy information traders transact opposite their quotes.⁸³ The latter generally specialize in spotting market prices that fail to reflect better understandings of *fundamental* values.⁸⁴ All the while, the former are channeling most of their energy to hone in on the market values and prices that allow them to earn their spread.⁸⁵ The problem that often comes to fruition for these lesser-informed traders is thus one of getting stuck having bought a stock for their market-making inventory from information traders that was overvalued, or having sold one from that inventory to those traders that was undervalued.⁸⁶ Either way, they suffer direct trading losses traceable to information asymmetry.⁸⁷ These losses to which this information asymmetry problem leads are considerable.⁸⁸

Market makers respond to the prospect of these losses in two ways: by increasing the size of their bid-ask spreads and by increasing the sensitivity of their price adjustment triggers. Each response protects the market makers from information asymmetry, yet reduces liquidity in the market. After all, larger spreads mean larger spread costs, and more sensitive price adjustment triggers mean larger market-movement costs. In this way, successful market makers pass on the costs of information asymmetry to other traders — and therefore investors.

A brief overview of these costs and dynamics should suffice for present purposes.⁸⁹ With respect to spread costs, the more precise

⁸³ For the seminal microstructure work modelling the discrepancy in knowledge between informed traders and market makers, and the adverse selection costs associated with it, see Lawrence R. Glosten & Paul R. Milgrom, *Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders*, 14 J. FIN. ECON. 71, 79 (1985).

⁸⁴ *Supra* Part I.B.

⁸⁵ *Supra* Part I.D.

⁸⁶ See Glosten & Milgrom, *supra* note 83, at 78.

⁸⁷ See, e.g., HARRIS, *supra* note 18, at 299 (“[I]nformed traders choose the side of the market on which they trade, and the dealers end up losing money to them.”); see also Glosten & Milgrom, *supra* note 83, at 79.

⁸⁸ See, e.g., HARRIS, *supra* note 18, at 303 (“[I]n most markets the adverse selection spread component accounts for more of the total spread than does the transaction cost spread component.”); *id.* at 297 (noting that market maker fortunes depend on, among other things, “how much they lose to informed traders”).

⁸⁹ The spread and market-movement costs summarized here are well-known to the economists who study the stock market and the professionals that inhabit it. References to the former costs have also become increasingly present in the legal literature on securities law over time. See, e.g., Henry G. Manne, *Insider Trading: Hayek, Virtual Markets, and the Dog That Did Not Bark*, 31 J. CORP. L. 167, 168 (2005) (noting that these costs represent an “insider trading tax” for non-insider investors); see also *infra*

market maker response is to post inferior quotes at both inside quotes and the ticks surrounding them. That is, there is an increase in the size of the spread between market makers' best (highest) bid quotes and best (lowest) ask quotes as well as a decrease in the number of shares quoted at them and/or each successively inferior price quote.⁹⁰ Whether viewed as a spread cost or as one associated with inferior pricing, the key point is that the premium on top of the current market value that traders buying opposite liquidity provider ask prices must pay is larger when information asymmetry is heightened. The same goes for the discount off that market value that those selling against liquidity provider bid prices must accept.⁹¹

The market-movement costs can be similarly summarized. Market makers adjust their estimates of value and corresponding prices in response to net buying or selling activity in the market.⁹² For this reason, those transacting opposite their quotes in large enough quantity cause market movements that drive up their purchase prices when buying, and push down their sale prices when selling. Their own trading thus causes market prices to move up (down) over the short run, thereby resulting in the traders behind it paying (receiving) an average price that is higher (lower) than that dictated by the fundamental value information known by the market at the time. Their trading is thus said to have a "price impact," or to "leave a footprint."⁹³ Because the price impact/footprint causes prices to move in the opposite direction of their short-term trading interest before they can complete that trading, they

note 182. Nevertheless, description of the latter is for the most part missing from that literature. In my related work on the stock market information asymmetry and its regulation from a social perspective, *see supra* note 19, I look more closely at each of these costs.

⁹⁰ *See generally supra* Part I.D (describing these aspects of market-maker quotes).

⁹¹ The total size of the spread (and therefore these costs) is also a product of other forces — namely, those that impose other costs on market makers. *See, e.g.,* Ananth Madhavan, *Market Microstructure: A Survey*, 3 J. FIN. MARKETS 205, 242-43 (2000). The main other cost incurred by these professionals relates to the inventory risk associated with holding assets with values that can vary widely. *See id.* at 223; *supra* note 69 and accompanying text. Nevertheless, information asymmetry is generally the largest driver of spread sizes (and hence spread costs). *See supra* note 88 and accompanying text.

⁹² *See* Glosten & Milgrom, *supra* note 83, at 87; *id.* at 91 (stating that when a market maker experiences unexpectedly high trading volume due to informed trading, "he will revise upward his estimate of the probability of an insider arrival and increase the spread accordingly").

⁹³ RISHI K. NARANG, *INSIDE THE BLACK BOX: A SIMPLE GUIDE TO QUANTITATIVE AND HIGH-FREQUENCY TRADING* 119-20 (2d ed. 2013) (discussing "market impact" and the concept of "leaving a footprint" in this context).

are said to suffer a cost. The cost comes in the form of an average price tag per share that is higher than it would otherwise be.

Because this cost is traceable to the market maker concern for having their quotes adversely selected by better-informed traders, it too is rooted in information asymmetry. When market makers expect heightened asymmetry, the threshold that triggers these movements will be lower — meaning that market-movement costs for those buying and selling opposite them will be higher.⁹⁴ When those professional intermediaries sense a reduction in information asymmetry in the coming period, the opposite is true.⁹⁵ All of these behaviors are exacerbated by the fact that trading in the market is largely anonymous, meaning that even the purchases and sales of portfolio-trading ordinary investors can have this price impact despite their extra-informational nature — and thus can trigger this second type of information asymmetry cost.

Lastly, it is important to note that this specific type of illiquidity that comes in the form of the spread and market-movement costs summarized above can be harmful even when those costs are not directly incurred. I therefore include a third category in this discussion of that illiquidity, and label it “avoidance costs.” This final aspect of the illiquidity imposes costs on investors when they seek to avoid one or both of the costs detailed above. This avoidance can have two main negative effects on investors. The first involves lost utility from not trading. In short, expected spread and/or market-movement costs can result in a trader opting to sit out the game.⁹⁶ To the extent this forbearance results in an investor missing out on what would otherwise be a utility-enhancing portfolio adjustment, profitable investment opportunity, or the like, it represents a cost. The second avoidance cost involves the allocation of resources toward trading at a lower spread and/or market movement cost. This cost is thus incurred when the investor has avoided spread and market-movement costs not by omitting to trade, but instead by throwing money or other resources at

⁹⁴ See Glosten & Milgrom, *supra* note 83. For empirical evidence supporting this point, see Easley et al., *Time-Varying Arrival Rates of Informed and Uninformed Traders*, 6 J. FIN. ECONOMETRICS 171, 196 fig.4 (2008) (showing the price impact of individual trades in the same stock in different informational environments).

⁹⁵ See Glosten & Milgrom, *supra* note 83; Easley et al., *supra* note 94, at 196 fig.4.

⁹⁶ See, e.g., George M. Constantinides, *Capital Market Equilibrium with Transaction Costs*, 94 J. POL. ECON. 842, 859 (1986) (“[I]nvestors accommodate transaction costs by drastically reducing the frequency and volume of trade.”).

the problem — for example, by engaging in a burdensome search for counterparties who are willing to transact at better prices.⁹⁷

B. *Market Discounts for the Illiquidity*

Markets have a way of dealing with the expected costs associated with the thing being bought or sold: they discount the value of that thing. The most prominent example of this dynamic is found in asset pricing models for stocks, which center on discounts for the market-wide risk and opportunity costs inherent in stock investment.⁹⁸ Rights to expected future cash flows (e.g., \$100 in one year) are therefore purchased at a lower dollar amount today (e.g., \$93).

Stocks' market prices will be discounted due to other considerations as well.⁹⁹ The robust literature on securities disclosure law provides a prominent example of this principle in its examination of the quality of corporate disclosure.¹⁰⁰ All else being equal, the less that is known about an issuer, the larger the risk involved with holding its securities. So this discount makes sense as a matter of basic finance.¹⁰¹

Along these same lines, there are also related discounts due to illiquidity in the secondary market. The existence of these discounts is

⁹⁷ Some might think that ordinary investors incur information asymmetry costs in ways beyond those in focus above, namely by trading directly opposite better-informed traders without market-maker intermediation. Although this Article challenges the status quo on information asymmetry and ordinary investors, it does not challenge the conventional law and economics idea that, on an expected basis, ordinary investors engaging in portfolio trading suffer no harm when they transact directly opposite better-informed traders, or when they transact elsewhere in the market at the same time as better-informed traders. See, e.g., Manne, *Defense*, *supra* note 5, at 115; see also sources cited *supra* note 17. In my contemporaneous work, I think more about this direct trading situation for various types of investors. See Haeblerle, *Information-Asymmetry Story*, *supra* note 19.

⁹⁸ See, e.g., BREALEY ET AL., *supra* note 14, at 24-25; Sharpe, *supra* note 25, at 425-42.

⁹⁹ E.g., Stephen J. Choi & Andrew T. Guzman, *Portable Reciprocity: Rethinking the International Reach of Securities Regulation*, 71 S. CAL. L. REV. 903, 925 (1997) (“In addition to the incorporation of information about macroeconomic conditions, industry conditions, firm management, firm capital structure, and many other factors, the market will take into account the value of the securities laws [I]f the laws provide opportunity for managers to extract value from the firm, this will be reflected in lower prices for the traded securities.”).

¹⁰⁰ E.g., Fox et al., *Share Price Accuracy*, *supra* note 13, at 336 n.13 (noting the “broad consensus that the effect of . . . future disclosure practices [by an issuer] on the expected future cash flow to holders of the issuer’s shares is reflected in the price”).

¹⁰¹ See *supra* note 98 and accompanying text.

the subject of a foundational microstructure article¹⁰² and the literature built on it.¹⁰³ The core point of the works in this area is that “[i]nvestors require a higher expected return from an asset with lower liquidity to compensate for its higher trading costs.”¹⁰⁴ Simply put, the market discounts the value of illiquid stocks.¹⁰⁵

Illiquidity discounts can be material to stock pricing. This point is one of the central ones of the foundational Amihud and Mendelson article.¹⁰⁶ These costs matter because they will generally be incurred

¹⁰² Yakov Amihud & Haim Mendelson, *Asset Pricing and the Bid-Ask Spread*, 17 J. FIN. ECON. 223 (1986) [hereinafter *Asset Pricing*]. The premise also has been at least roughly acknowledged in the legal literature dating back to even before the Amihud and Mendelson article. See Easterbrook, *Insider Trading*, *supra* note 9, at 325 (published in 1981). Professor Fox and I also acknowledged these discounts in 2017. See Merritt B. Fox & Kevin S. Haeberle, *Evaluating Stock-Trading Practices and Their Regulation*, 42 J. CORP. L. 887, 906 (2017) (“[T]he prospect of greater liquidity results in the issuer’s expected future cash flows being discounted to present value at a lower discount rate.”).

¹⁰³ Professors Amihud and Mendelson, joined by Professor Lasse Heje Pedersen, survey this literature in YAKOV AMIHU ET AL., *MARKET LIQUIDITY: ASSET PRICING, RISK, AND CRISES* (2013) [hereinafter *MARKET LIQUIDITY*].

¹⁰⁴ Yakov Amihud & Haim Mendelson, *Liquidity and Asset Prices: Financial Management Implications*, 17 FIN. MGMT. 5, 6 (1988) [hereinafter *Liquidity*]; *see also id.* (“Investors . . . require a compensation from the trading costs they bear. Thus, asset prices should reflect their liquidity characteristics.”).

¹⁰⁵ E.g., AMIHU ET AL., *MARKET LIQUIDITY*, *supra* note 103, at 1 (“If two assets generate the same cash flows over time but one of them is less liquid (has higher trading costs), rational investors will pay less for the less liquid asset, which costs more to trade.”).

¹⁰⁶ See Amihud & Mendelson, *Asset Pricing*, *supra* note 102, at 224 (“This study highlights the importance of securities market microstructure in determining asset returns, and provides a link between this area and mainstream research on capital markets.”). The subsequent literature on asset pricing and liquidity further supports this conclusion. See, e.g., BODIE ET AL., *supra* note 36, at 313 (“[T]he liquidity premium that emerges from these studies [following the seminal Amihud and Mendelson article] appears to be of roughly the same order of magnitude as the market risk premium, suggesting that liquidity should be a first-order consideration when thinking about security pricing.”). *But see* Constantinides, *supra* note 96, at 847 (concluding that “transactions costs have only a second-order effect on the liquidity premium of an asset’s rate of return”); *id.* at 859 (“[A]n investor’s expected utility is insensitive to deviations from the optimal portfolio proportions. Hence the liquidity premium due to transaction costs is small.”). Notably, the Constantinides (1986) conclusion on the magnitude of the discount is inconsistent with the literature that has since emerged, as indicated by the second source above. See also AMIHU ET AL., *MARKET LIQUIDITY*, *supra* note 103. However, the extent to which the literature maintains that liquidity costs alone (as opposed to the cost associated with the risk of liquidity costs changing in the future (“liquidity risk”)) are of first-order importance is unclear.

each time the security changes hands,¹⁰⁷ and securities change hands quite often.¹⁰⁸

The literature on liquidity and asset pricing focuses on just that, and not just information-asymmetry-based illiquidity. But its central premises summarized here nevertheless apply to the latter. Information-asymmetry-based illiquidity in the market (i.e., that embodied in spread and market-movement costs) is nothing more than a type of illiquidity.¹⁰⁹ Indeed, information asymmetry is generally the leading driver of spread and market-movement costs in the market today.¹¹⁰

To be sure, some buyers will purchase their shares without paying spread or market-movement costs. That is generally true of, for example, buyers who purchase shares, directly or indirectly, from an issuer in an IPO.¹¹¹ But the costs matter for even these buyers, as they still face the prospect of illiquidity when selling down the road.¹¹² Of course, one who purchases a stock from an issuer in an IPO and then holds it throughout the entire life of the firm (perhaps collecting dividends along the way) would not be directly harmed by illiquidity in the secondary market. But most investors do not purchase shares in the primary market (or even the secondary one) to hold them in that way.¹¹³ Thus, due to the presence of asymmetrically-informed market participants and the spread and market-movement costs to which that presence gives rise, the market price for stock is affected negatively (i.e., discounted) from IPO forward. And this discount of course has the

¹⁰⁷ See Amihud & Mendelson, *Liquidity*, *supra* note 104, at 6 (noting “the significance of trading costs when their recurring nature is taken into account”); *id.* (“[T]hese costs will be incurred repeatedly whenever the asset is traded.”).

¹⁰⁸ See, e.g., *supra* notes 56, 60–61 and accompanying text (discussing current share turnover rates and average holding periods).

¹⁰⁹ See *supra* Part II.A.

¹¹⁰ See *supra* notes 88–89 and accompanying text.

¹¹¹ Buyers can sometimes escape these costs in the secondary market in other ways as well. See Haerberle, *Information-Asymmetry Story*, *supra* note 19 (discussing market mechanisms that allow such avoidance).

¹¹² E.g., Ayres, *supra* note 20, at 977 (“As long as there is a positive probability that investors will need to sell their shares while the market is illiquid, the stock price will be discounted.”). The uncertain nature of that probability and the amount of future illiquidity present added costs for investors. See, e.g., AMIHU ET AL., MARKET LIQUIDITY, *supra* note 103, at 101-84 (providing an overview of the economics literature on “liquidity risk”).

¹¹³ See, e.g., Katrina Ellis, *Who Trades IPOs? A Close Look at the First Days of Trading*, 79 J. FIN. ECON. 339, 344-45 (2006) (finding a 76% mean turnover rate of IPO shares in just the first two days of trading); see also *supra* note 61 and accompanying text (discussing typically annual turnover by both portfolio traders and information traders).

power to greatly alter the extent to which investors are harmed by information asymmetry.

C. *The Effect of the Discounts on Buy-and-Hold Ordinary Investors and the Larger Universe of Ordinary Investors*

The natural inference from the conclusions of the preceding section is that all investors, as a general matter, are able to negate the impact of information asymmetry on their investment return thanks to the relevant discounts. This appears to be the reigning assumption among those who have considered the effects of market discounts more generally on ordinary investors.¹¹⁴ But the assumption does not reflect important nuance — and overlooks the likely significant benefit of information asymmetry on the margin for at least buy-and-hold ordinary investors.

The more precise effect of illiquidity discounts on ordinary investors, I theorize, turns on ordinary investors' investment horizon relative to that of the marginal investor. All else being equal, on an expected basis, the negative impact of spread and market-movement costs that will be incurred by an investor turns on the length of his investment holding period.¹¹⁵ The longer the holding period, the better these costs can be amortized, and therefore the less the investor must discount to negate them.¹¹⁶ The shorter that period, the opposite is true.¹¹⁷

Professors Amihud, Mendelson, and Pedersen illustrate this dynamic in their book with the following example, which I alter for additional clarity:

¹¹⁴ See *supra* note 20 and accompanying text. The recent *Informed Trading and Its Regulation* article published by colleagues with whom I have worked closely appears to make this assumption, albeit in the context of a far broader discussion. See Fox et al., *Informed Trading*, *supra* note 43, at 841 (“Freely occurring fundamental value informed trading does widen the spread that uninformed traders need to pay. However, this widened spread . . . neither helps nor hurts uninformed traders on average because share prices are commensurately discounted to reflect this widened spread.”).

¹¹⁵ See Amihud & Mendelson, *Asset Pricing*, *supra* note 102, at 228 (stating that “transaction costs are amortized over the investor’s holding period”).

¹¹⁶ See *id.* at 231 (concluding that “longer investment horizon mitigates the burden of transaction costs by enabling their amortization over a longer holding period”); *id.* at 228-29 (“The longer [the investor’s holding] period, the smaller the compensation required for a given increase in spread.”); Amihud & Mendelson, *Liquidity*, *supra* note 104, at 6-7 (noting that the cost of illiquidity is lower for investors with longer holding periods).

¹¹⁷ See Amihud & Mendelson, *Asset Pricing*, *supra* note 102, at 228-29, 231; Amihud & Mendelson, *Liquidity*, *supra* note 104, at 6-7.

Consider, for example, an asset that pays out a riskless annual dividend of \$4 in perpetuity and suppose the risk-free annual rate is 4%. Absent trading costs, the asset price is \$100. However, if the asset incurs a trading cost of \$0.50 (0.5% of its value) [each time it is traded] and is traded once a year, the cash flow stream associated with the trading costs has a net present value of \$12.5 of the asset's value, meaning that the price of the asset drops to $\$100 - \$12.5 = \$87.5$. Said differently, while a transaction cost of 0.5% is a small fraction of the asset's [initial \$100] value, it should really be compared to the 4% [(\$4.00)] dividend yield, because both dividends and transaction costs are "flows" that are incurred repeatedly. Since the transaction cost [(\$0.50)] is one-eighth [(12.5%)] of the dividend yield [(\$4.00)], [the cost's] present value is one-eighth [(\$12.50)] of the present value of [the asset's] dividends [(\$100)] ($\$12.5/\$100 = 1/8$). Furthermore, if the asset is traded every half-year, then after accounting for transaction costs, the asset's value will be about \$75, a discount of \$25 [because the annual transaction fees incurred ($\$0.50 \times 2$) take away \$1 (or 25%) of the \$4 expected return [of the asset — thereby requiring a discount of \$25 on the \$100 transaction-cost-free price of the future cash flow right represented by the asset.]¹¹⁸

It follows that the scope of the prevailing discount for information-asymmetry-based illiquidity will depend on the investment horizon of the marginal investors who determine the equilibrium price of stocks.¹¹⁹ If those investors turn over their investments more rapidly, then they will feel the costs of information asymmetry more acutely — and discount prices more aggressively. In order to obtain the expected return they require to make the investment attractive for that period, they will require a larger discount. If they hold their positions for longer, the opposite will be true.¹²⁰

¹¹⁸ AMIHUD ET AL., MARKET LIQUIDITY, *supra* note 103, at 3-4.

¹¹⁹ *See supra* note 21.

¹²⁰ AMIHUD ET AL., MARKET LIQUIDITY, *supra* note 103, at 10 ("Long-term investors can effectively depreciate their trading costs over a longer holding period, and thus require a smaller compensation in terms of per-period additional return than short-term investors."). Indeed, due to this added return that is available, a liquidity clientele effect will result in longer-term investors opting into stocks with more illiquidity. *See id.* at 4 ("Higher trading costs can be better borne by long-term investors who trade less frequently and, therefore, can depreciate them over a longer investment horizon."). This will decrease the premium that is available to long-term investors. *See id.* ("[W]hile expected return is an increasing function of trading costs, it should be concave

Ordinary investors will either have an investment horizon that is shorter than, equal to, or longer than that of these price setters. Roughly speaking, some ordinary investors will therefore, respectively, be hurt by information asymmetry, some left unaffected by it, and others will benefit from it.¹²¹ On one end of the spectrum are ordinary investors pursuing information trading and noise trading approaches. These investors have relatively short investment horizons.¹²² On the other end are those buy-and-hold ordinary investors who index the market as a whole, and who thus generally have long investment horizons.¹²³ But who are the marginal investors who set the size of the discount?

The identity of the marginal investor has long eluded market observers.¹²⁴ But the remarkably short duration of average holding periods reported today and related turnover data suggests that this unobservable investor pursues an active investment strategy,¹²⁵ whether traceable to an information or noise approach (or even an active portfolio one that does more than merely invest in an index of the entire market or some broad part thereof).¹²⁶ If this is true, then it is the impact of information asymmetry costs on active investors' expected return that determines the relevant discount. If, due to information asymmetry costs associated with a stock's purchase and sale, these investors value the stock at, e.g., \$75/share rather than the \$100 price that they would pay absent illiquidity, then they will only be willing to buy the stock up until the point at which its market price is \$75.

Strikingly, to the extent the marginal investor pursues an active information or noise strategy, her investment horizon is dramatically shorter than that of buy-and-hold ordinary investors — and indeed portfolio-trading ordinary investors as a whole.¹²⁷ It follows that

(increasing at a decreasing rate), reflecting the mitigating effect of long-term holding periods on the sensitivity of return to transaction costs.”)

¹²¹ Those who benefit from information asymmetry are better off not just because they will be able to purchase a given dividend stream at a lower price, but also because they can obtain capital appreciation at a lower price. In other words, all else being equal, the longer-term investor would benefit even if the directors retained earnings in the firm rather than distributing them to shareholders via dividends.

¹²² See *supra* Parts I.B, I.C.

¹²³ See *supra* Parts I.A. Those pursuing more active portfolio trading than mere buy-and-hold indexing also have relatively long horizons, albeit to a lesser degree. See *supra* Part I.A.

¹²⁴ See *supra* note 22 and accompanying text.

¹²⁵ See *supra* notes 56–63 and accompanying text (describing average holding periods of just four months, the closely related high turnover rates, and related reasons to believe that *active* investing involves short holding periods).

¹²⁶ See *supra* Parts I.B, I.C, I.A, respectively.

¹²⁷ See *supra* Parts I.A, I.B.

information asymmetry on at least the margin provides more of the very thing these investors target by investing: expected return. Accordingly, *the reductions in information asymmetry* provided by the core disclosure, fraud, and insider trading rules appear to be an unattractive feature of the law for at least buy-and-hold ordinary investors (qua investors).

Of course, there are costs that might have come along with those investors' longer holding periods.¹²⁸ The main one is that the investors might have refrained from changes to their investment portfolio that would otherwise have brought them utility.¹²⁹ To in fact be worse off due to the relevant reductions in information asymmetry, the lost-return cost the investors incur would have to outweigh whatever gain the reductions provide them in terms of utility from less trade forbearance. But for at least those buy-and-hold investors who, even with more liquid trading, would not be making changes to their portfolio during their investment period, there is no such loss in utility. And most buy-and-hold ordinary investors likely suffer little from information-asymmetry-based trade forbearance. For one thing, the market index in which they invest rebalances itself, thereby reducing the utility that can be gained from more frequent trading.¹³⁰ For another, these investors' risk preferences generally should not be changing in a way that calls for significant trading each year, let alone in less than the average holding period that is said to exist today (four months¹³¹). Moreover, empirical research suggests that the scope of the utility reduction is small for even those buy-and-hold investors and more active portfolio traders who, all else being equal, would prefer to make such changes over time, yet omit to because of the relevant costs.¹³²

Do the other types of avoidance costs change this thinking? Quantifying the costs of the game in which investors try to transact opposite each other without incurring the full spread and market-movement costs present in the best displayed quotes in the market¹³³ is far beyond the scope of this Article. But any argument that buy-and-hold ordinary investors' share of those costs changes the above thinking in a way that results in the lost return from the relevant reductions in information asymmetry being dominated by saved avoidance costs

¹²⁸ See *supra* Part II.A; *supra* note 98.

¹²⁹ See *supra* Part II.A.

¹³⁰ See *supra* Part I.A.

¹³¹ See *supra* note 61 and accompanying text.

¹³² See Constantinides, *supra* note 96, at 859 (finding that "an investor's expected utility is insensitive to deviations from the optimal portfolio proportions").

¹³³ See *supra* Part II.A (describing these costs).

would require, at a minimum, a look at costs that — to my knowledge — have never even triggered serious investor-protection concern. These insights therefore present a challenge to the idea that the reductions to information asymmetry provided by the core securities laws are even a neutral proposition for these investors (qua investors). That these ordinary individuals are trading in line with the consensus ordinary-investor approach encouraged by the SEC and social science¹³⁴ makes the challenge one that applies to conventional thinking on information asymmetry and investor protection more generally.

Still, a larger question remains: What does the identification of this long-overlooked cost of the reductions in information asymmetry provided by the core securities laws mean for the larger universe of ordinary investors? Those reductions are also, I argue, disconcerting from the perspective of these investors (as investors). This is because

¹³⁴ E.g., MALKIEL, *supra* note 13, at 266-67 (“Because active management generally fails to provide excess returns and also tends to generate greater tax burdens for investors as they regularly realize capital gains, the advantage of passive management holds with even greater force.”); *id.* at 407 (“The indexing strategy is the one I most highly recommend.”); Ayres & Fox, *supra* note 57, at 453 (“[T]he consensus among economists and financial professionals is surprisingly straightforward: Absent an alpha opportunity, one should hold a portfolio which is (1) well-diversified, (2) low-cost, and (3) exposes you to age-appropriate stock market risk.”); Chester S. Spatt, Chief Economist and Dir., U.S. Sec. & Exch. Comm’n, Address to the Pennsylvania Association of Public Employee Retirement Systems Forum: Public Plan Investment and the Role of Indexing (Apr. 12, 2007), <https://www.sec.gov/news/speech/2007/spch041207css.htm> (stating that, as a result of the many advantages of passive investing, the author “tend[s] to advocate personally the use of low-cost passive and index investment products” and that “[f]or uninformed investors low-cost passive strategies are very sensible given the competition within the marketplace and efficiency of the capital market”); Kathleen Elkins, *Jack Bogle Taught a Generation How to Invest for the Long Term — This Was His Strategy*, CNBC, (Jan. 17, 2019, 12:02 PM), <https://www.cnbc.com/2019/01/17/jack-bogle-taught-a-generation-how-to-invest-for-the-long-term-this-was-his-strategy.html> (“[T]he simplest and most efficient investment strategy is to buy and hold all of the nation’s publicly held businesses at very low cost.” (quoting Jack Bogle)); *Risk and Return*, INVESTOR.GOV, <https://www.investor.gov/additional-resources/specialized-resources/youth/teachers-classroom-resources/risk-return> (last visited Oct. 12, 2019) (“[I]nvestors who’ve adopted a ‘buy and hold’ approach to investing tend to come out ahead of those who try to time the market.”); Lori Schock, *Women Can Level the Playing Field in Investing*, INVESTOR.GOV, <https://www.investor.gov/additional-resources/specialized-resources/directors-take/women-can-level-playing-field-investing> (last visited Oct. 12, 2019) (“Women tend to buy and hold onto their investments, while research shows that men tend to try to time the market and trade more frequently. In fact, the investing approach used by many women is a good way to plan for the long-term.”). In addition to the aforementioned sources on the consensus of the SEC and social science, the judges of the chief corporate law tribunal in the United States have also supported this thinking. E.g., Strine, *supra* note 63, at 12 (stating that “[m]any of the wisest end-user investors do choose investment funds that do not churn: index funds,” and discussing the social science backing this view).

the reductions likely result in an investment-return wash for the ordinary investors that pursue a trading strategy that is as active as the price setters, a benefit to those who are even more active, *yet a harm to the vast portion that trades in and out of stock positions less frequently.*

More precisely, which ordinary investors are as active as the price setters, which are even more active, and which are more passive? The answer depends on the type of trading pursued by the majority of ordinary investors and, like above, the identity of the price setters. If the price setters are investors who follow an information or noise approach, then the full universe of passive ordinary investors faces the ordinary-investor cost identified in this Article. To the extent the majority of ordinary investors follow a passive approach, a challenge along the same lines as that made above then can be made, albeit with respect to ordinary investors as a whole. But if the price setters are portfolio traders who pursue a more active rebalancing approach,¹³⁵ then it is only the more passive ordinary investors (namely, buy-and-hold ones) who are worse off in terms of investment return. All the while, ordinary investors that engage in an even more active approach (whether through information, noise, or portfolio trading) are in fact better off in terms of investment return thanks to the reductions in information asymmetry.

How this all nets out for ordinary investors as a whole when the laws' effects on the additional costs of stock-market information asymmetry (i.e., the avoidance costs¹³⁶) are factored in, I cannot say. In short, the picture here is less discernable than that drawn earlier in this Section with respect to the reductions in information asymmetry provided by the core laws and buy-and-hold ordinary investors. Without more precise data on holding periods tied to specific investors trading in specific types of ways, conclusions for ordinary investors as a whole are tough to state with confidence. However, three clear conclusions have already been drawn, and a fourth can now be stated. The first such conclusion was that the reductions in information asymmetry likely impose an investment-return harm on buy-and-hold ordinary investors. The second was that this harm must be weighed against only limited

¹³⁵ See *supra* notes 36, 41–42 and accompanying text. With the massive shift from active to passive management over the past decade or two, it is possible that the marginal investor is more passive than active. See, e.g., Asjlynn Loder, *Do Passive Investors Move Markets? They Can*, WALL ST. J. (July 18, 2018, 4:37 PM), <https://www.wsj.com/articles/etfs-unlikely-to-cause-widespread-market-disruptions-research-shows-1531906200> (“Assets in passive funds that try to match the market rather than beat it have quintupled in the past decade to \$6.9 trillion, according to research firm Morningstar.”).

¹³⁶ See *supra* Part II.A (describing these costs).

gains from those same reductions for these investors. The third was that the fact that these investors are pursuing the precise investment strategy encouraged by the SEC and social science rendered these first two effects, when taken together, disconcerting from an investor-protection perspective. And the fourth conclusion I add here is that the closely related effects on ordinary investors as a whole are also disconcerting from an investor-protection perspective.

Lastly, it is worth emphasizing two final points. First, if the marginal investor is a buy-and-hold one, then the relevant reductions in information asymmetry are simply investment-return neutral for buy-and-hold ordinary investors. After all, if this is the case, the costs of the relevant illiquidity *for these investors* would likely be fully reflected in the market discount — and thus the price of the stock.

Second, the precise scope of both the ordinary investor costs and benefits sketched out above based on the well-founded assumption of a more active marginal investor remains unknown beyond the broad disconcerting contours drawn here.¹³⁷ Indeed, the scope of the likely investment return harm to buy-and-hold ordinary investors attributable to the relevant reductions turns on a set of empirical questions identified for the first time here. As explained in this Section, that scope centers on the investment timeframe of the marginal investor relative to the investor group at issue. Likewise, the scope of the trade-avoidance costs turns on (1) the amount of the utility loss suffered by the members of the group who refrain from trading due to the relevant illiquidity (if any), and (2) the costs associated with seeking to trade at lower spread and/or market-movement costs incurred by the same (if any).

* * *

This Part has provided long-overlooked nuance on the relationship between the core securities laws that reduce information asymmetry in

¹³⁷ Interestingly, even with respect to those information trading ordinary investors for whom the relevant costs are a wash, information asymmetry more generally might be net positive. After all, information asymmetry is the key to information trading success. See *supra* Part I.B. Indeed, one can even question whether the relevant spread and market-movement costs are properly classified as costs for information-trading investors. If these traders truly have better information than the market, then the ask prices they pay above and beyond the then-current market value of the stock can be viewed as prices that are closer to the true value of the stock. The same basic principle applies with respect to market movement “costs” for these traders: as they accumulate larger positions that they have reason to believe are underpriced, they pay prices that are closer to the true value. Whatever the appropriate characterization of these “costs” for these traders, the brief overview of them in Part II.A makes clear that they are in fact costs for at least portfolio traders — and therefore the vast majority of buy-and-hold ordinary investors.

the stock market and ordinary investor wellbeing. As explained above, market makers incur losses to better-informed traders while operating vulnerably on the front lines of the market. In response to the expectation of those losses, they make changes that result in other traders — and therefore investors — incurring information asymmetry costs in two main forms, one relating to spreads and the other to market movements. Any comprehensive discussion of the ordinary investor effects of the core laws that limit informational unevenness among market participants should thus include consideration of how traders are affected by each of these costs, as well as the related costs that are sometimes incurred to avoid them.

This Part began such a discussion. In particular, it built on, among more basic aspects of economic theory, well-established principles arising out of a foundational work that bridged principles of microstructure with those of mainstream finance. In so doing, it explained how investors discount the amount they will pay for stock to reflect the prospect of illiquidity, thereby erasing costs of information asymmetry from investment returns. But the extent to which the prevailing discount performs that function for any group of investors turns on the investment horizon of those investors in relation to the same of those who determine the discount. Consequently, the relevant reductions in information asymmetry, I theorized, will improve the investment return of some portion of the ordinary investor universe, be a wash for that of another, and harm that of the one that remains. The extent to which one of these three dynamics dominates is an empirical question first identified above that turns on the holding period of the marginal investor relative to that of the group of ordinary investors at issue (including the group of “all ordinary investors”). Building on yet additional economic theory, this Part also viewed this newly identified cost of the relevant reductions against more familiar benefits (those associated with the reductions’ effect on what I have termed “avoidance costs”). In the end, there was much reason to think that at least buy-and-hold ordinary investors fell inside the circle of the harmed. That those market participants invest in line with the consensus guidance of the SEC and social science means that this observation is one that challenges conventional thinking about information asymmetry and investor protection more generally. Moreover, the implications for the larger universe of ordinary investors as a whole were also disconcerting given the typical sustained holding periods of major groups of ordinary investors versus the short average holding periods in the market today.

III. IMPLICATIONS FOR THE INVESTOR-PROTECTION DIVIDE AND THE
LAW

The nuanced positive conclusions about the reductions to informational unevenness at the heart of modern securities law offered above have considerable normative implications. The main ones relate to the investor-protection divide and the appropriate focus of investor-protection efforts in the law. In this final Part, I examine each of these sets of implications in turn.

A. *Implications for the Investor-Protection Divide*

For decades now, investor-protection advocates have maintained that the core securities laws mitigate informational unevenness in obvious ways, thereby helping ordinary investors.¹³⁸ All the while, the law and economics orthodoxy has asserted that these laws do little, if anything, on this front.¹³⁹ But the theories offered in the preceding Part tell us much about the extent to which each of these competing views is supported by reality.

Most strikingly, the relevant law and economics argument against the core laws is understated. When it comes to at least buy-and-hold ordinary investors, one must be dubious of the idea that the reductions in information asymmetry these laws provide is even a neutral proposition.¹⁴⁰ Instead, there is a compelling story to be told in which these reductions impose a serious cost on these investors — and harm them on net.¹⁴¹ The law and economics orthodoxy has thus been too meek on this front.

The other side of this same coin is that the investor-protection advocates have overstated their case. The case for arguing that the relevant information asymmetry (the increased amount that would exist without the core securities laws) presents a significant problem for ordinary investors as a whole should now seem far-fetched. This is for two reasons. First, some significant portion of the ordinary investor universe likely benefits from that asymmetry (and that portion is mostly composed of those who are investing in exactly the way in which the government and consensus view economists have told them they should invest¹⁴²). Second, there is much reason to be skeptical of the idea that

¹³⁸ See *supra* notes 4, 6–10 and accompanying text.

¹³⁹ See *supra* notes 5, 11–17 and accompanying text.

¹⁴⁰ See *supra* Part II.C.

¹⁴¹ See *id.*

¹⁴² See *supra* note 134 and accompanying text.

there is any larger negative net effect of that asymmetry on ordinary investors as a whole.¹⁴³

Still, also inherent in my positive conclusions is that there are likely many ordinary investors who are in fact helped by the laws at issue.¹⁴⁴ That is because my analysis shows that information asymmetry on the margin does harm some ordinary investors — namely, those who are engaged in active trading.¹⁴⁵ This group may even include those who are engaged in especially active *portfolio trading*, depending mainly on whether they prefer to shift from consumption to savings or vice versa with more frequency than the marginal investor.¹⁴⁶ These investors' active trading provides them with benefits. Yet, information asymmetry stings them because the reigning discount in the market is set by investors with longer investment horizons, and is therefore insufficient to address their information-asymmetry costs. Moreover, these same ordinary investors — and more — also benefit from the reductions in information asymmetry to the extent that those reductions reduce their avoidance costs.

One could therefore argue that, if the goal is to *protect* ordinary investors, pursuing disclosure, fraud, and insider trading law to limit information asymmetry makes sense. After all, those laws will reduce the extent to which some ordinary investors incur spread and/or market-movement costs that are not negated by the prevailing market discounts. And it will limit the extent to which those (and other) ordinary investors lose out on the utility they would gain from portfolio adjustments they would make in the absence of those costs, and the extent to which they must allocate resources to trade with lower spread and market-movement costs. That said, three significant limitations on this thinking must be acknowledged.

First, the group of ordinary investors that is actually harmed by information asymmetry on the margin (and therefore helped by the reductions in information asymmetry provided by the securities laws) might be small enough relative to those who are helped by that asymmetry (and therefore hurt by the reductions) that the legal efforts in focus would be of limited import to ordinary investors as a whole. Just how likely is it that there is a sizeable enough portion of the ordinary investor universe that trades in and out of stocks at a faster clip than those investors whose conduct gives rise to average holding

¹⁴³ See *supra* Part II.C.

¹⁴⁴ See *id.*

¹⁴⁵ See *id.*

¹⁴⁶ See *id.*

periods in the four-month range and average turnover rates of 100% and higher?¹⁴⁷ And how likely is it that the size of this group of ordinary investors comes anywhere close to dominating that composed of longer-term ordinary investors? Avoidance-cost benefits must too be factored in,¹⁴⁸ but it is hard to paint this as some kind of seriously problematic investor-protection picture.

Second, market forces alone might provide enough protection on this front, thereby obviating the need to deploy disclosure, fraud, and insider trading rules toward reducing information asymmetry to protect ordinary investors. Firms have an incentive to reduce information asymmetry.¹⁴⁹ Reductions in such asymmetry decrease market discounts that, by definition, harm the value of company stock.¹⁵⁰ For that reason, in the absence of these laws, firms should be expected to disclose a large amount of information to the public, and to do so with integrity.¹⁵¹ Whether or not that is the case turns on a larger debate that has gone on for decades about market forces and these areas of law.¹⁵²

¹⁴⁷ See *supra* notes 56, 60–61 and accompanying text (discussing holding periods and turnover rates today).

¹⁴⁸ *Supra* Part II.A (discussing these costs of information asymmetry).

¹⁴⁹ See, e.g., Roberta Romano, *Empowering Investors: A Market Approach to Securities Regulation*, 107 YALE L.J. 2359, 2367 (1998) [hereinafter *Empowering Investors*] (noting empirical research on the power of capital markets to assess the impact of legal regimes on investment returns and the “entrepreneurial motivation [of firms] to reduce capital costs”); Ayres, *supra* note 20, at 952–53 (noting that “even before the federal securities laws mandated honest disclosure of financial statements, firms attempted to precommit to honesty by hiring independent accountants to verify their truth”); Mahoney, *supra* note 13, at 647 (“Issuers of securities speak to the market often. Though some of the information they provide is mandated by the federal securities laws, many of their statements are made without legal compulsion.”).

¹⁵⁰ See Amihud & Mendelson, *Asset Pricing*, *supra* note 102, at 246 (“The higher yields required on higher-spread stocks give firms an incentive to increase the liquidity of their securities, thus reducing their opportunity cost of capital. Consequently, liquidity-increasing financial policies may increase the value of the firm.”); *id.* (“[I]nformation disclosures may be construed as investments in increased liquidity.”); *id.* at 224 (“[L]iquidity-increasing financial policies can reduce the firm’s opportunity cost of capital . . .”).

¹⁵¹ E.g., Ayres, *supra* note 20, at 946 (stating that if the law allowed firms to lie, “market forces [would] drive virtually all firms to commit to honesty, and at least some [would] commit to (or establish reputations for) remaining silent”).

¹⁵² For the view that private ordering is insufficient to bring about optimal disclosure, see Merritt B. Fox, *Retaining Mandatory Securities Disclosure: Why Issuer Choice Is Not Investor Empowerment*, 85 VA. L. REV. 1335 (1999). But see EASTERBROOK & FISCHEL, *ECONOMIC STRUCTURE*, *supra* note 1, at 276–314; ROBERTA ROMANO, *THE ADVANTAGE OF COMPETITIVE FEDERALISM FOR SECURITIES REGULATION* (2002); Easterbrook & Fischel, *Mandatory Disclosure*, *supra* note 1, at 709–13 (describing the potential advantages of a market regime for securities disclosure law, but concluding

But even if one sides with the proponents of private ordering, it is hard to imagine that firm managers would sufficiently refrain from the private gains associated with insider trading in order to reduce the scope of illiquidity discounts in the market in the name of reducing the company cost of capital. Moreover, disclosure by competitors and other firms decreases information asymmetry, and firms may therefore suffer from a collective action problem when it comes to finding a sufficient level of disclosure for investor-protection purposes. Consequently, one would think that the securities laws, at a minimum, provide some material reduction to information asymmetry beyond what markets would accomplish on their own. But it is nevertheless likely that market forces alone would do much to mitigate the effect of information asymmetry discounts that are too small for some ordinary investors (i.e., the frequent traders), thereby limiting the appeal of legal efforts aimed at protecting even that one subset of the ordinary investor universe that is clearly made better off by the reductions traceable to current law.

Third, any relevant investor-protection gains for the portion of investors that is harmed by information asymmetry would come at a cost to other ordinary investors. This final point follows from one of the main points of this Article, found in the previous Part's conclusion that the reductions provided by the core securities laws were likely costly for at least significant portions of the ordinary investor universe — including the portion investing in the very way ordinary investors are told to invest by the SEC and social science.

It is worth noting that if the marginal investor is a buy-and-hold one who does nothing more than index the market as a whole, then the general position of the law and economics orthodoxy (i.e., that the reductions do little if anything for ordinary investors) may be correct. But even in this unlikely scenario, one would still have to consider what the reductions did to help various ordinary investors in terms of alleviating trade-avoidance costs. In the end, an interesting debate, informed by the framework set forth here, might ensue between the orthodoxy and investor-protection advocates.

All this is not to say that there aren't other arguments to be made in favor of the core securities laws from an ordinary-investor fairness and/or protection perspective. For one thing, a broader set of fairness and investor-protection issues beyond the information-asymmetry-

that, based on the empirical research thus far, it is uncertain whether leaving the issue to the market is actually better than the status quo); Romano, *Empowering Investors*, *supra* note 149.

based one in focus in this Article¹⁵³ can be identified.¹⁵⁴ Those who have a broader view of investor protection may nevertheless still take issue with uneven informational footing in the stock market. For example, for them, any inability for ordinary direct-trading investors to have equal access to new information (and thus equal trading profit *opportunities*, if not outcomes), may in and of itself pose a problematic unfairness, no matter what that access means for the number at the bottom of 401(k) statements. For another, even if it mainly turns on the theory detailed above and the corresponding facts about investor types and time horizons, the precise pros and cons of information asymmetry on the margin for the groups noted above remains an unanswered empirical question.¹⁵⁵ But the discussion provided in this Section shows why an investor-protection dialogue informed by the nuanced positive theories set forth in the previous Part is in order.¹⁵⁶ Indeed, if nothing else, all of the above description and analysis shows that the conventional wisdom on information asymmetry and the protection of ordinary investors would benefit from this newly added nuance to the scholarly literature on securities law.

¹⁵³ See *supra* notes 2–3 (limiting my focus to the relationship between the core efforts to curb stock-market information asymmetry, on the one hand, and ordinary-investor wellbeing on the other).

¹⁵⁴ For an overview of that broader set of issues, see Michael D. Guttentag, *Protection from What? Investor Protection and the JOBS Act*, 13 UC DAVIS BUS. L.J. 207 (2013). See also Haerberle, *Information-Asymmetry Story*, *supra* note 19 (focusing on the larger social costs of stock market information asymmetry).

¹⁵⁵ See *supra* Part II.C.

¹⁵⁶ Interestingly, even if the reductions to information asymmetry at issue harm buy-and-hold ordinary investors on net (or even the larger universe of ordinary investors on net), investor welfare arguments might still be used to argue against any change to the status quo. This is because any such change that increased information asymmetry would reduce the value of *the existing investment positions of all ordinary investors*. After all, the reigning discount for information-asymmetry-based illiquidity is based on current levels (and expected levels) of the same. See *supra* Part II.B. An exogenous change that unexpectedly increased those levels (and therefore increased the market discount) would increase expected returns on existing investment positions. But in so doing, it would reduce the value of those positions for at least those who already hold them and who plan on selling out of them sooner rather than later. Investments made there forward by the relevant ordinary investors would, all else being equal, have higher expected returns without having to incur that reduction in value. But, a strange debate might result, where the interests of many current ordinary investors are weighed against those of these future ordinary investors.

B. *Implications for the Law*

The theories should also change at least the focus of investor-protection efforts, as they cut strongly in favor of shifting any such focus away from the core securities laws and to areas of regulation that have received far less attention.¹⁵⁷

1. *Shifting Away From the Core Securities Laws*

The theories of this Article do not question the more general support in American society for laws that protect ordinary investors. And the SEC's mission is to “*protect investors, maintain fair, orderly, and efficient markets, and facilitate capital formation.*”¹⁵⁸ Consistent with this, the SEC is empowered by Congress to make rules pursuant to an investor-protection standard¹⁵⁹ — and to do so even if that means eschewing larger social considerations. Congress can do the same under, at a minimum, its Commerce Clause powers. But given the conclusions offered above, the focus of any such effort with an eye on additional regulation should be moved from the core securities laws to other less prominent areas. A brief discussion of insider trading law and the investor-protection promise of areas of securities law that receive far less attention makes this point.

Insider trading law has traditionally garnered much attention from scholarly and popular audiences alike. A good amount of the attention has been on the extent to which this law protects ordinary investors, with the investor-protection advocates arguing for robust trading restrictions¹⁶⁰ and many law and economics critics supporting legalization.¹⁶¹ But the theories set out above demonstrate that,

¹⁵⁷ My theories do not touch on the value of the core securities laws for ordinary investors in the IPO market. See *supra* note 2. It is possible that further reductions to information asymmetry that those laws might provide in that market would be worth pursuing as well.

¹⁵⁸ *What We Do*, U.S. SEC. & EXCH. COMM'N (June 10, 2013) (emphasis added), <https://www.sec.gov/Article/whatwedo.html>.

¹⁵⁹ E.g., Yoon-Ho Alex Lee, *The Efficiency Criterion for Securities Regulation: Investor Welfare or Total Surplus?* 57 ARIZ. L. REV. 85, 94 (2015) (“[T]he SEC can engage in rulemaking to promote *either* investor protection *or* a more general ‘public interest’ goal.”). Interestingly, the agency generally pursues the former approach. See *id.* at 90 (“At best, the SEC can be seen as analyzing its rules’ net effects on the economic welfare of its primary constituents: investors.”); *id.* at 126 (“[T]he SEC has historically employed the investor welfare approach.”).

¹⁶⁰ See *supra* note 4 and accompanying text.

¹⁶¹ See *supra* note 5 and accompanying text.

paradoxically, the imposition of insider trading law should be disconcerting from an investor-protection perspective.

For those that have followed the academic and policy debate in this area, a notable observation should follow. For about a half century now, investor-protection advocates have maintained that the trading restriction protects ordinary investors, albeit at a cost to price accuracy. In other words, price accuracy has to be traded off in order to generate these ordinary investor gains. Highly regarded theoretical work from the not too distant past presented a serious challenge to the conventional wisdom that insider trading law was bad for price accuracy, arguing just the opposite: that the restriction was justified based on its *positive* impact on price accuracy.¹⁶² If credited, that theory along with the one presented in this Article show that there is a compelling story to be told in which the conventional wisdom has been upside down. In reality, by restricting insider trading, one could argue, the law likely trades off well-being for at least buy-and-hold ordinary investors in return for higher levels of price accuracy. Glibly put, even if not by original intention, insider trading law throws the ordinary investors under the bus in order to obtain more accurate pricing and its benefits for the wider economy.

The insider trading example is just one such illustration of my point. Other aspects of the core securities laws would provide similar ones. One might look to the latest additions to the Regulation S-K's disclosure requirements, or the controversial overlay of private securities fraud litigation under the Section 10(b) for analogous stories.

Ultimately, whatever the precise trade-offs at play with disclosure, fraud, and insider trading law (and various individual aspects of those core areas of securities law), the theories and analysis provided in this Article show that one should be dubious of investor-protection stories that center on these laws' effect on information asymmetry in the secondary market.

2. Shifting Toward Less Prominent Areas of Securities Law

The conclusions offered earlier also reveal the promise held by lesser-studied areas of the law. Thinking briefly about two such areas (trading market structure and investment advice duties) in this context makes the point.

The analysis in this work and a related series of recent works¹⁶³ can be built on to show how the regulation of the structure of the stock

¹⁶² See Goshen & Parchomovsky, *On Insider Trading*, *supra* note 9.

¹⁶³ See *supra* note 18; *infra* note 182.

market can help ordinary investors avoid the costs of information asymmetry.¹⁶⁴ For example, despite much criticism of off-exchange trading platforms in policymaker and popular circles alike, the above analysis and conclusions show how those platforms could help ordinary investors avoid these costs. Many such platforms separate ordinary investor trading from sophisticated investor trading to a high degree. They can therefore help ordinary investors avoid the spread and market-movement costs that now reign on exchanges.¹⁶⁵ This is because the spreads and market movements that are most relevant to a trader are those associated with the venue on which she is trading, as each trading venue will reflect the informational characteristics of the trading it hosts.¹⁶⁶ So, to the extent off-exchange platforms can segregate out ordinary investor trading, they can help ordinary investors avoid those costs — thereby protecting them in meaningful ways.

Indeed, at least one group of ordinary investors — that engaging in direct trading through retail-level brokerage accounts — is especially able to avoid information asymmetry costs thanks to this market structure. These individuals have almost 100% of their orders to buy and sell stock on demand internalized by broker-dealers rather than routed to exchanges and the like.¹⁶⁷ Because these orders are generally assumed to be uninformed,¹⁶⁸ the market makers that trade opposite them are willing to provide their services at tighter spreads and subject

¹⁶⁴ More bang for ordinary investors' buck might be obtained by focusing instead on the structure of other securities markets, such as those for corporate or municipal bonds. But the example in the text nevertheless makes the present point: that the investor-protection focus relating to ordinary investors who invest in the stock market (if any focus) should shift away from the core securities laws.

¹⁶⁵ See Kevin S. Haeberle, *Stock-Market Law and the Accuracy of Public Companies' Stock Prices*, 2015 COLUM. BUS. L. REV. 121, 148-50 (2015) [hereinafter *Stock-Market Law*] (explaining how these platforms help ordinary investors avoid information asymmetry costs, and why that help reduces the information trader incentive to generate fundamental value analysis, and, in turn, price accuracy and its larger social benefits).

¹⁶⁶ See *supra* Parts I.D, II.A (discussing market makers and their response to asymmetrically informed trade).

¹⁶⁷ See, e.g., Concept Release on Equity Market Structure, 75 Fed. Reg. 3,594, 3,600 (Apr. 21, 2010) (to be codified at 17 C.F.R. pt. 242) (“A review of the order routing disclosures required by Rule 606 of Regulation NMS of eight broker-dealers with significant retail customer accounts reveals that nearly 100% of their customer market orders are routed to OTC market makers.”).

¹⁶⁸ E.g., Christine A. Parlour & Uday Rajan, *Payment for Order Flow*, 68 J. FIN. ECON. 379, 381 (2003) (“Retail order flow is widely believed to be uninformed.”); Comment Letter from Suhas Daftuar, Managing Dir., Hudson River Trading LLC, to Elizabeth M. Murphy, Sec’y, U.S. Sec. & Exch. Comm’n, 1 (Nov. 30, 2011) (“Retail investors’ orders are generally considered to be uninformed, in that they are unlikely to cause or have information about short-term price movements.”).

to less sensitive price-movement triggers.¹⁶⁹ This translates to lower information asymmetry costs for these investors. Consequently, assuming sufficient competition, it is likely that these particular ordinary investors are able to purchase stocks at bid and ask prices that reflect less information-asymmetry-based illiquidity than present elsewhere in the market, yet that are valued at a lower price thanks to that same information asymmetry.¹⁷⁰ Moreover, because these direct trading individual investors generally do not transact in large size, they do not incur market-movement costs. The import of these final points is considerable, as internalization of these orders is thought to cover a significant portion of all stock trading today,¹⁷¹ including the vast majority of all individual-investor, retail-level trading.¹⁷²

Lastly, regulation of the market for investment advice has similar potential. One need only think of the consumer protection issues associated with conflicted advice from brokers to see this potential,¹⁷³

¹⁶⁹ See *supra* Part I & Part II.A; see, e.g., Daftuar, *supra* note 168, at 1 (noting that internalization is “generally driven by internalizers’ ability to discriminate among potential customers, taking the other side of retail orders which, unlike orders from proprietary trading firms or institutional investors, are unlikely to have short-term adverse impact on the liquidity provider”).

¹⁷⁰ See generally Kevin S. Haeberle, *Discrimination Platforms*, 42 J. CORP. L. 809 (2017) [hereinafter *Discrimination Platforms*] (discussing the distinct trading environments at exchanges and various types of off-exchange platforms).

¹⁷¹ It has been said that around 20% of all reported stock trading is internalized. E.g., Concept Release on Equity Market Structure, *supra* note 167, at 15; *Dark Pools, Internalization, and Equity Market Quality*, ISSUE BRIEF (CFA Inst., Charlottesville, Va.), Nov. 2012, at 1, 3. The majority of this internalization is thought to be attributable to direct trading ordinary investors, with more no doubt traceable to those same investors, albeit indirectly through investment funds whose orders are internalized.

¹⁷² See Concept Release on Equity Market Structure, *supra* note 167, at 21. Other ordinary investor-friendly devices of the contemporary stock market provide similar benefits, and may (taken together) provide yet additional reasons for thinking that information asymmetry on the margin is helping at least buy-and-hold ordinary investors today. For example, patient ordinary investors are able to transact at the midpoint of the bid-ask spread thanks to “midpoint liquidity orders” offered by all major exchanges. This saves these investors from both spread and market-movement costs. The complexity of these devices and the ways in which they help direct trading and indirect trading ordinary investors avoid these costs is beyond the scope of this Article. But I describe them in detail in making related points in my contemporaneous work on information asymmetry from a social welfare perspective. See Haeberle, *Information-Asymmetry Story*, *supra* note 19.

¹⁷³ Recent efforts by the Obama-era Department of Labor and the Trump-era SEC perhaps reflect at least implicit agreement with these points. For the recent rule adopted by the SEC, see Regulation Best Interest: The Broker-Dealer Standard of Conduct, 84 Fed. Reg. 39,178 (Aug. 9, 2019) (to be codified at 17 C.F.R. pt. 240). For an overview

or, perhaps more controversially, the fees associated with active mutual fund investments.¹⁷⁴ Whether or not these types of regulatory changes targeted at this distinct market generate additional social wealth or just transfer existing amounts, they should thus be appealing to investor-protection advocates.

Of course, taken together, the central findings of this Article and the investor welfare standard noted earlier in this Section suggest that the SEC could reduce the scope of the core securities laws in the name of protecting at least buy-and-hold ordinary investors. Indeed, the agency could even mandate disclosure maximums, encourage corporate lying, and green light more insider trading. But for three main reasons, these approaches do not follow from my analysis. First, whatever the state of norms today, these approaches are unlikely for obvious political reasons. Second, for perhaps most, the larger positive role of the core securities laws¹⁷⁵ compels something roughly along their current form. Third, my central positive claims in this Article are merely that the reductions in information asymmetry provided by the core securities laws *likely* impose a cost on buy-and-hold ordinary investors *while conferring only limited benefits*, and that for closely related reasons we should be concerned about their effect on ordinary investors as a whole.¹⁷⁶ Thus, the most attractive normative argument is for the investor-protection focus to be shifted to other areas of securities regulation rather than for considering a rollback of the core ones.

* * *

This Part discussed the most notable policy prescriptions that flowed from Part II's positive theories. Given the disconcerting picture of the relationship between the reductions to information asymmetry provided by the core securities laws and at least buy-and-hold ordinary-investor well-being drawn in Part II, I showed that changes are in order for both thinking and action. In particular, this Part laid a foundation for a more informed discussion about information asymmetry and the protection of ordinary investors than that which has reigned to date. It also provided a nudge in favor of (and an accompanying roadmap for) shifting any focus on efforts to protect ordinary investors in the stock

of the DOL effort and what it might have done for ordinary investors, see Benjamin P. Edwards, *Conflicts & Capital Allocation*, 78 OHIO ST. L.J. 181, 224-26 (2017).

¹⁷⁴ See *supra* note 50 and accompanying text (suggesting the existence of “closet indexing” by “active” funds).

¹⁷⁵ See *supra* notes 11, 51–52 and accompanying text (noting the efficiency benefits that the core securities laws are said to generate).

¹⁷⁶ See *supra* Part II.C.

market away from the core securities laws and to less prominent areas of regulation.

Of course, as first noted at the outset of this Article, there are larger costs and benefits of laws that reduce stock market information asymmetry. But those costs and benefits are not the subject of this work. Likewise, any change to the existing laws would likely change the quantity and quality of trading by ordinary investors and others, thereby bringing about secondary and tertiary effects on ordinary investors and others. For example, if the laws were rolled back, buy-and-hold ordinary investors may find themselves better off as investors, yet worse of as members of society. After all, a rollback of the core laws would increase information asymmetry on the margin, and therefore harm shorter-term traders. To the extent information traders consequently withdrew from the market and prices became less accurate, capital might be misallocated and firms mismanaged. These observations provide further reason — beyond mere political appeal — to avoid tinkering with the core securities laws in the name of investor protection, and to instead shift much of the investor-protection focus in the stock market to less prominent areas of regulation, such as those discussed in this Part.

Lastly, as these final thoughts indicate, this Article's theories scratch the surface of their even larger implications. I hope to touch more on them in my broader work on information asymmetry and social welfare,¹⁷⁷ as well as in other planned work. But it is worth noting here that the magnitude of the social effects of significant change to the reductions in information asymmetry provided by the core securities might be far larger with respect to something not in focus above. In this Article, I have focused on investor protection along with some added nuance about the larger efficiency concerns of the securities laws. But my analysis has considerable implications for the relationship between the core securities laws, on the one hand, and the composition of the ownership base of corporate America, on the other. If the reductions to information asymmetry at issue are taking away investment return from longer-term investors, then they are likely increasing the proportion of public company shares owned by shorter-term investors.¹⁷⁸ After all, by reducing information asymmetry, they make shares more liquid and thus more attractive to those investors. They may therefore be pushing the managers of those shareholders toward a shorter-term approach. Given the central emphasis in both economics and corporate law on

¹⁷⁷ See *supra* note 19 and accompanying text.

¹⁷⁸ See *supra* note 120.

long-term value maximization for public firms, this additional long-overlooked effect of the core securities laws, if substantiated as a matter of theory and/or empirics, would constitute an enormous elephant in the securities law room. Indeed, any such negative effects of the securities laws along these lines might dwarf even the considerable investor-protection ones identified in this Article.

CONCLUSION

Conclusory statements about securities law and the protection of ordinary investors have long been commonplace among policymakers and scholars. For investor-protection advocates, those statements have embraced a view of the world in which discrepancies in knowledge among stock market participants very much matter for ordinary investors, meaning that disclosure, fraud, and insider trading laws do too. For the law and economics orthodoxy, the statements have instead largely dismissed the idea of these core securities laws serving any significant investor-protection role relating to ordinary investors. For decades, these two sides of this investor-protection divide have generally talked past each other, with neither offering close enough analysis of how information asymmetry actually affects ordinary investors.

This Article attempted to close this investor-protection gap and move forward thinking on securities law. It did so by undertaking a detailed review of economic relationships between stock market participants with an eye on the costs of information asymmetry for ordinary investors. This review revealed that the reductions to information asymmetry provided by the core securities laws likely take away investment return for at least buy-and-hold ordinary investors — investors who are investing in accordance with the guidance of the SEC and the lessons of social science. All the while, the same reductions provided only limited assistance to these same investors. The result for ordinary investors as a whole was also disconcerting, although less clear on net.

The main relevant implications of these theories for the investor-protection divide and the content of the law were also significant. Perhaps most notably for the former, the law and economics orthodoxy has understated its case against the core of modern securities law as an area of investor protection. With respect to the latter, much more ordinary investor bang for the buck might be generated by shifting focus away from that core and toward more peripheral areas of regulation. Whether the majority of any resulting work comes from those who specialize in securities law as opposed to consumer protection, contract

law, or fiduciary law is not clear. But these positive and normative conclusions have made room for legal improvement by giving much reason to think that the real ordinary investor killer, if any, is still on the loose.

Of course, legal efforts to reduce information asymmetry could be driven by the goal of improving overall welfare, as opposed to simply ordinary investor welfare.¹⁷⁹ Although beyond the scope of this work, the conventional wisdom appears to be that the reductions in information asymmetry provided by the core securities laws give rise to net social benefits well beyond any traceable to ordinary investors.¹⁸⁰ Or, reducing information asymmetry might improve confidence in the market and mitigate larger perceptions of the stock market as an unfair social institution. Pursuing the core securities laws to limit those perceptions might therefore be desirable to many, even if it means indulging false assumptions about the laws' effects on ordinary investors.

Stepping back to more broadly view this Article's examination, theoretical conclusions, and legal implications provides a final, broader insight. The study shows what can be learned from careful examinations of the mechanics and economics of markets. Here, the focus was on what is perhaps the most prominent securities market in the world, and the precise harms key suppliers of long-term investment capital do and do not suffer as a result of the presence of better-informed traders in that market. But this approach can be used to reveal much more. For example, related studies can be pursued, such as the one mentioned several times above that contemplates the scope of the larger social costs and benefits of stock-market information asymmetry.¹⁸¹ The approach can likewise be used to examine other areas of securities law beyond the core ones mandating disclosure, prohibiting fraud, and restricting insider trading. This observation is apparent from what can be seen as an emerging area of legal scholarship — of which this work is a now part — on a wide array of securities laws seen from a market-

¹⁷⁹ See *supra* note 159 and accompanying text.

¹⁸⁰ E.g., *supra* note 150 and accompanying text. But see, e.g., Romano, *Empowering Investors*, *supra* note 149 (arguing that private ordering could obtain a more optimal result). Interestingly, the analysis offered in this Article suggests that the ordinary investor effects of the core securities laws may very well constitute a cost in any such larger cost-benefit analysis. All else being equal, any such analysis might therefore contain much less weight in the benefit column and much more in the cost one than present in existing evaluations. Also interestingly, the point raised in the final paragraph in Part III above regarding the ownership base of public companies may present a challenge to the convention wisdom about the securities laws and social welfare.

¹⁸¹ *Supra* notes 19, 82, 97, 111, 154 & 172.

microstructure perspective.¹⁸² Given the insights arising from this literature on the stock market and its regulation, one must wonder what such examinations would tell us about the validity of common views specific to the regulation of markets for things both far more simple and complex than public company stock.

¹⁸² See *supra* note 18 (discussing this emerging literature and its lag behind the related literature on mainstream finance and the law). For specific works incorporating principles of microstructure into the legal literature over the past five years (listed in reverse chronological order), see, for example, Robert P. Bartlett & Justin McCrary, *How Rigged Are Stock Markets? Evidence from Microsecond Timestamps*, J. FIN. MARKETS (forthcoming 2020) (examining high-frequency trading practices); Haeberle & Henderson, *New Market-Based Approach*, *supra* note 6 (proposing the construction and use of a well-regulated information market to address the core disclosure, fraud, and insider-trading problems of modern securities law); Paul Mahoney & Gabriel Rauterberg, *The Regulation of Trading Markets: A Survey and Evaluation*, in SECURITIES MARKET ISSUES FOR THE 21ST CENTURY 221-281 (2018); Merritt B. Fox, Lawrence R. Glosten & Gabriel V. Rauterberg, *Stock Market Manipulation and Its Regulation*, 35 YALE J. ON REG. 67 (2018); Kevin S. Haeberle & M. Todd Henderson, *Making a Market for Corporate Disclosure*, 35 YALE J. ON REG. 383 (2018) (arguing that a well-regulated information market would generate more corporate disclosure, released more frequently, in improved formats); *Informed Trading*, *supra* note 43 (thinking about a variety of information-based trading practices and rules from a microstructure perspective); Fox & Haeberle, *supra* note 102 (setting forth an evaluative framework for judging a range of stock-market practices and their regulation); *Discrimination Platforms*, *supra* note 170 (examining the trade transparency and trader-access practices at exchanges and alternative trading systems today); Merritt B. Fox, Lawrence R. Glosten & Gabriel V. Rauterberg, *The New Stock Market: Sense and Nonsense*, 65 DUKE L.J. 191 (2015) (examining and evaluating controversial stock market practices); Haeberle, *Stock-Market Law*, *supra* note 165.